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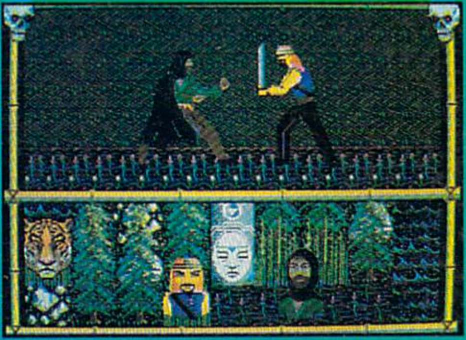
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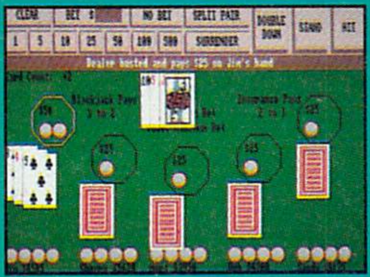
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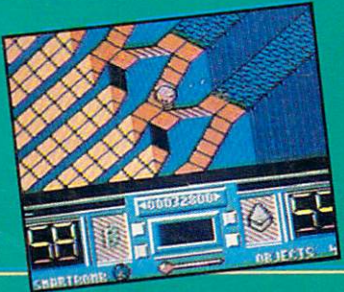












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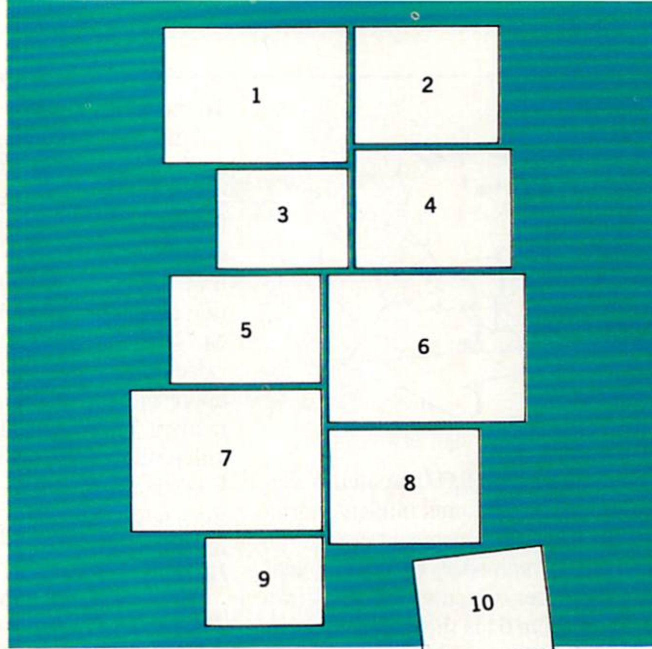
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Commodore
MAGAZINE

DECEMBER 1988, *Volume 9, Number 12*



FEATURES

COVER STORY

SOFTWARE ON THE COVER

1. *Animation: Apprentice* by Hash Enterprises
2. *Sporting News Baseball* by Epyx, Inc.
3. *Robot Readers* by Hilton Android Corp.
4. *Skate or Die* by Electronic Arts
5. *Superbase Professional* by Precision Software, Inc.
6. *Flight Simulator 2* by SubLogic
7. *Moebius* by Origin
8. *Blackjack Academy* by MicroIllusions
9. *Might and Magic* by Mediagenic
10. *Battledroidz* by DataSoft

REVIEWS

DEPARTMENTS



To The Editor:

There are some 480,000 amateur radio operators in the U.S., and millions worldwide. For a specific technical reason, many own a Commodore 64, even in addition to any other computer they may own. The Commodore 64 is the ideal system interface for amateur equipment to perform packet radio, RTTY-teletype, TV, satellite relays, and other state-of-the-art communication needs.

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Dr. G. F. Schilling
Amateur Radio Station AI6I
P.O. Box 2250
Hemet, CA 92343.

To the Editor:

I enjoy your magazine very much. Although I am new to the ranks of your subscribers, I can only wonder why your coverage of the Amiga has expanded so, when there is an Amiga magazine already in print *(AmigaWorld)*. It would make sense to save the space for 64/128 reviews and programs. That is the idea behind two separate publications, right?

A Delighted but Puzzled Reader,
James D. Johnston
Mechanicsburg, PA

Editor's Response:

Thank you for the compliments, Mr. Johnston. Your confusion is apparently shared by others. Commodore Magazine *is a subsidiary of Commodore Business Machines, manufacturer of the Commodore 64, 128 and Amiga 500 and 2000. There are many Commodore- and Amiga-specific publications available from third-party publishers* (AmigaWorld *is published by IDG Communications, Peterborough, NH).* Commodore Magazine *is the only magazine published by Commodore, therefore, we cover Commodore's complete line.*

To the Editor:

I just received your September issue and read the news section, but to my dismay I found you made a mistake. I am referring to the page-long article on the Consumer Electronics Show. You state that "*Carrier Command* is a strategic action game for the Amiga and Commodore 64." I am afraid Rainbird Software has decided not to release the 64 version. I would appreciate it if you would inform your readers. This information was obtained via a software dealer, please inform me if it is incorrect.

Sincerely,
Robert Bogue
Bay City, MI

Editor's Response:

According to our source at Rainbird, Carrier Command *for the Commodore 64 is scheduled for release in the November/December time period. The Amiga version has been available for a while. Your software dealer may have been under the impression that the two versions were to be released simultaneously.* Carrier Command *for the Commodore 64 retails for $34.95. You may want to leave a copy of this Letters column lying around the house as a hint for Santa, Robert.*

To the Editor:

The October issue had the "Quest for Sequels" article by Shay Addams, as well as the section in the "News" about new releases from Infocom. Infocom was bought by Mediagenic, which used to be called Activision, and that brings me to my question. With all the talk about sequels, and remembering that Activision released *Hacker* and *Hacker II*, has there been any mention at all about a *Hacker III*? I would really enjoy another adventure in the same style as those first two, with their carefully tailored sensation of stumbling into something unexpected. All together now: "We want *Hacker III!* We want *Hacker III!* . . . "

Sincerely,
Les Leist
Alexandria, VA

Editor's Response:

At press time Activision has no plans for a Hacker III. *But as we've said so often, if there's a product you want, let the company know. You can write to: Activision, 3885 Bohannon Drive, Menlo Park, CA 94025.*

Address letters for publication to:
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1200 Wilson Drive, West Chester, PA 19380

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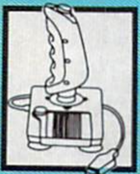
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MicroProse Flying High

by Jim Gracely

During the week of August 22, 1988, MicroProse celebrated its sixth anniversary. A number of editors and writers from the U.S. and England were on hand to help celebrate the occasion and had the opportunity to talk about some future products.

MicroProse is a company with a wonderfully colorful beginning. The much-publicized anecdote goes like this: In the summer of 1982, Bill Stealy and Sid Meier (both employees of General Instruments at the time) were playing a **Red Baron** arcade game in Las Vegas. Stealy complained about the game, and Meier stated he could design a better simulation in a week. Stealy said if Sid could make it, he could sell it. About two months later (the "week" was a slight exaggeration), during the week of August 22, 1982, Sid Meier walked up to Bill Stealy at a shopping mall and handed him **Hellcat Ace.**

In early 1983 MicroProse released three titles: **Hellcat Ace, Floyd of the Jungle** and **Chopper Rescue.** Later that year, **Solo Flight** was released. In 1984 **F-15 Strike Eagle** was released in the U.S. This year, **F-15 Strike Eagle** will receive a "Diamond" award from the Software Publishers Association (SPA) for 500,000 copies sold.

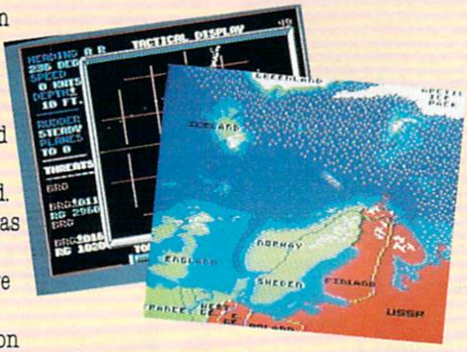
In 1988 MicroProse has already released **Project: Stealth Fighter** and **Airborne Ranger,** has **Red Storm Rising** shipping now and is planning to ship **MicroProse Soccer** before the end of the year. (Both **Project: Stealth Fighter** and **Airborne Ranger** were reviewed in the September 1988 issue of *Commodore Magazine.*)

Project: Stealth Fighter was released for the Commodore 64 in the spring, and an Amiga version will be released sometime after the spring of 1989. By the time the Amiga version is released, it will be going by its new name—**F-19 Stealth.** Consumer confusion was the main reason given for the change.



"Wild Bill" Stealey, President of MICROPROSE and Jim Gracely, Managing Editor of *Commodore Magazine.*

Red Storm Rising is a submarine warfare simulation based on the book of the same name by Tom Clancy. The game's premise is that the Warsaw Pact countries have invaded Western Europe, and you must command an American nuclear attack submarine against Soviet submarines and surface ships. You can choose four time frames to play in (1984, 1988, 1992, 1996), four difficulty levels, eight different submarine classes to command and a dozen scenarios ranging from training maneuvers to WW III. This product is bound to become a classic very quickly. The controls, options, graphics and strategy involved create a riveting sense of action and suspense. Because you can play anything from a one-on-one battle to the complete World War III scenario, games can last from 15 minutes to tens of hours. (Bill Stealy claims that by holing up in his basement and saving the game each time he won he was able to complete one of the WW III scenarios in 13 hours). Watch for a complete review in an upcoming issue.



MicroProse Soccer is the first product from the MicroProse UK division. This double-sided disk will feature the standard 11-player European game on one side and the nine-player U.S. indoor game on the other. The game is played from a bird's-eye view with the ball rising up into the viewer's eye on kicks. Interesting features include winds and weather patterns demo I saw was played in a thunder storm). This game will ship in October for the 64 and sometime in early 1989 for the Amiga.

The UK division of MicroProse has also struck joint marketing ventures with a number of U.S. software developers including Berkeley, Cosmi and Origin Systems. Richard Garriot and Chris Roberts of Origin Systems were at MicroProse to demonstrate **Ultima V** and **Times of Lore.**

Times of Lore is billed as an introduction to role-playing and adventure games with a completely icon-driven interface. You travel through an enormous world gathering gold, magical items and potions in your search for a missing king. It is designed for beginners to introduce concepts such as combat, exploring, mapping, using potions and spellcasting.

Ultima V is the latest and most advanced installment of the popular Ultima series. The story goes like this: Lord British was ambushed in the underworld and is presumed dead. You and your friends are a band of "Robin Hoods" trying to do good in a land under a bad ruler and marshall law. You must destroy the shadow lords who represent untruth, cowardice and hatred, and of course, attempt to discover the fate of Lord British. An interesting feature is that there is almost 30 minutes of musical score in the game with themes for various situations. On the machines that support MIDI (including the Amiga) the scores can be routed externally to a MIDI device.

What can we expect from MicroProse in the future? Well, they don't typically talk about products until they are ready to ship, but Bill Stealy did have this comment to make: "If you liked *Westworld*—we've got a product. Stand by for my press conference next year."

MicroProse has one other area of activity that is newsworthy. A coin-op (traditional quarter-play arcade game) division was started last October. This division, called MicroProse Games, is planning to ship their first game during the first quarter of 1989. While no details were given as to what the game would be, everyone consented that it would be some sort of flight-related product. Eugene Lipkin, VP and General Manager of MicroProse Games, stated that the only rule they were living by was that the machine would be shipped to the arcade on a truck. He claims the product will be "one of the most unique products the industry has seen in the past couple of years." What is the basis for that kind of statement? A commitment to design.

MicroProse Games was started

Continued on page 10

Continued from page 8

from the ground up and has designed all of the hardware for their coin-op division. The hardware has a strong emphasis on graphics and is ideally suited for simulations. Two technical terms are used to describe the graphic capabilities of a system: "polygons" and "frames per second." The number of polygons in each frame determines how detailed the graphics can be, while the number of frames per second determines the speed and smoothness of the images. The MicroProse Games hardware is capable of 2000 polygons at 30 frames per second. As a comparison, **F-19 Stealth** on an 80386 machine has 50 polygons with a rate of six frames per second. That's a 200X increase in polygons/second! MicroProse is currently speculating that they will be one of the major coin-op companies by this time next year.

Of course, everyone visiting MicroProse gets to go for a flight on the *Miss MicroProse*—"Wild Bill" Stealy's company plane. The plane is a U.S. Navy T-28-B two-seat fighter trainer with a 1425hp Curtiss-Wright prop engine and a maximum speed of 350mph. Believe me, after a flight in this aerobatic plane, flight simulators take on a whole new reality.

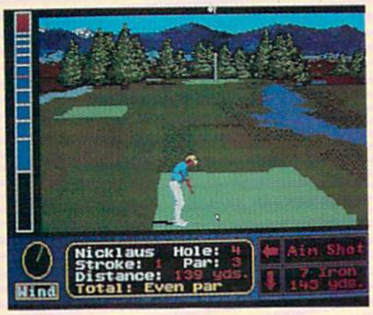
In all, MicroProse is still flying high, and it looks like clear sailing into 1989. ▣



Who Framed Roger Rabbit

It was only a matter of time. Buena Vista Software has released **Who Framed Roger Rabbit** for the Commodore 64 and Amiga. The program incorporates (what else?) splendid animation and graphics plus music and sound effects in three separate game scenarios. You can race Benny the Cab through Tinseltown, retrieve the missing will and get past the evil weasels at the cartoon Gag Factory. Retail price for the Commodore 64 version is $29.95; for the Amiga it's $44.95. For details contact: Buena Vista Software, 3800 W. Alameda Ave., Suite 325, Burbank, CA 91505. Phone: (818) 569-7397.

Jack Nicklaus' Championship Golf



Accolade has signed Jack Nicklaus to a three-year contract to produce computer golf simulations. The first offering, **Jack Nicklaus' Greatest 18 Holes of Major Championship Golf,** is scheduled to be released for the Commodore 64 and Amiga in time for the holiday season. The program features Nicklaus' favorite 18 holes, based on the recently released videotape from ABC Sports Video library. Players go up against Jack or four other computerized men and women. The Commodore 64 version retails for $29.95; the Amiga version sells for $44.95. For further information contact: Accolade, 550 S. Winchester Blvd., Suite 20, San Jose, CA 95128. Or call: (408) 985-1700.

Special Amiga 500 System Offered

Commodore Business Machines, Inc. has announced a special holiday promotion on the Amiga 500. When you purchase a special Amiga 500 system from an authorized dealer between now and December 31, 1988, you'll walk out with a free VCR (retail value $400).

The special system consists of an Amiga 500 computer, 1084S stereo color monitor, and a Software Starter Kit (which includes entertainment, productivity, video and graphics programs).

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Commodore/Amiga dealers have details on the offer; call (800) 343-3000 to find the Amiga dealer near you.

Offer good while supplies last.

AmiEXPO

AmiEXPO was held in Chicago at the end of July.

You would expect software packages to outnumber hardware packages at AmiEXPO, but in terms of the attention-grabbers in Chicago, hardware won out. NewTek, as expected, drew the largest crowd with their already-famous **Video Toaster**. This video effects/frame capture/genlock device which was made famous on PBS' *Computer Chronicles* is expected to ship in November, although NewTek had not put a firm price on it yet (due to volatile memory prices). Newtek was on the verge of releasing **DigiPaint II,** the first major upgrade to their HAM paint program.

Magni Systems entered the Amiga marketplace with their **Model 4004 Video Graphics System** genlock system. Not only does this genlock blow away all other genlocks for the Amiga in terms of price (with the **Model 4004 VGS** starting at $1500), but it is also loaded with features. For example, an input signal is not needed in order to maintain a stable encoder. Magni considers the **Model 4004 VGS** to be the highest quality encoder available.

ASDG was previewing their **color scanner** package, which consists of a hardware color scanner by Sharp and a software interface by ASDG. This package allows you to scan any color page and convert it to Amiga graphics.

Continued on page 12

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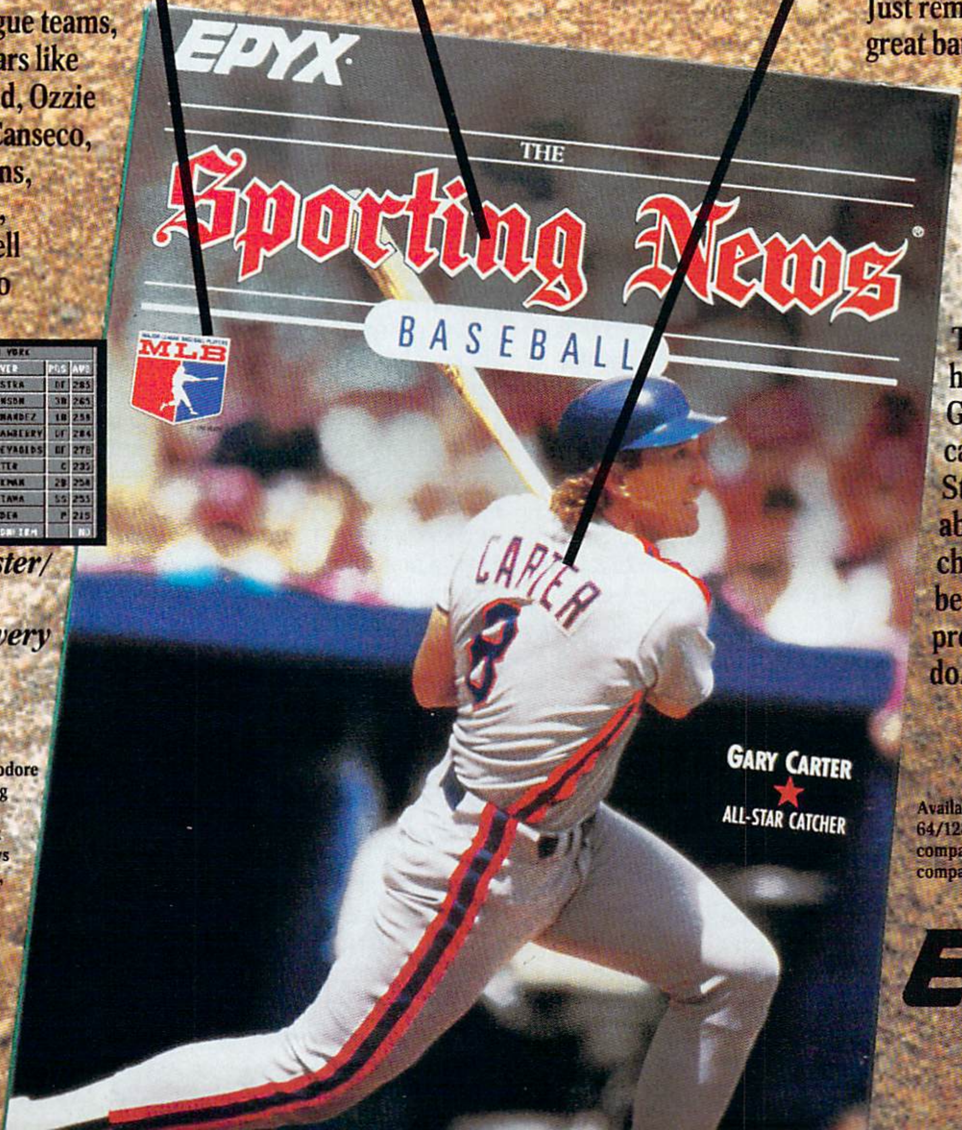
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Continued from page 10

ASDG was also showing **TwinX,** an Amiga 2000 card that has two sockets for any IEE 959 (iSBX) modules. **TwinX** retails for $329, and ASDG has three modules that can be bought directly for $199 each.

Great Valley Products was showing off their **Impact** line of SCSI hard disk controllers and hard cards. Unlike other controllers, the **Impact** series serves as both memory cards (up to 2MB per card) and as a SCSI controller card. The **Impact** line is the first SCSI card available for the Amiga that has built-in sockets for the 1.3 EPROMS that are necessary for autobooting hard drives. GVP also bundles some very nice software that makes installing a hard drive much easier.

Creative MicroSystems Inc., makers of *Kickstart Eliminator,* introduced the **Processor Accelerator.** If you can't afford to splurge for a 68020 board, this could become your speed-up board of choice. Essentially it is a small board made by Thompson that holds a 16 MHz 68000 (running at 14.32 Mhz) and doubles your processor instruction speed. Since it sits on top of the 68000 socket, Amiga 500 and Amiga 1000 owners can easily take advantage of this board as well. The **Processor Accelerator** retails for $199.95.

Ronin Research and Development, makers of the **Hurricane** line of 68020/68030 boards, were in the Expert Services booth. Since Ronin uses a daughter board to hold memory, only one slot is taken up on the A2000 system bus. For those who don't want to have to purchase their own 68020/68030, Ronin will ship a **Hurricane** with either a 16, 20 or 25MHz 68020 or a 16 Mhz 68030. The bare **Hurricane** board, without any processors, retails for $432, and the 68030 add-on board retails for $230.

Memory And Storage Technology (MAST) were showing a couple of unique hardware products. Their featured product, **Whomper Plus,** is a hardware virus protector on a printed circuit board that plugs into the floppy drive(s). It has LEDs to tell you when you didn't write-protect the disk, and when the disk is being written to. You can tell it to automatically protect the whole disk from being written to, or just track zero (where the boot blocks are located.) **Whomper Plus** does not "detect" a virus in any way, it just deals with prevention. **Whomper Plus** protects one drive for the A500 or two drives for the A2000 and retails for $69.95. MAST was also showing **Minimegs 500,** a tiny 2MB board for the A500. **Minimegs 500** uses 1MB DRAM chips and is unique because it has an LED that shows when the memory is being accessed. **Minimegs 500** uses the A500's own power supply and retails for $199 with no memory installed.

Bill Haws' macro-language **AREXX** was the language making the most noise at AmiExpo. **AREXX** provides the ability to integrate applications from different software vendors. Among the software products that support **AREXX,** are *MicroFiche Filer Plus* by Software Visions, *CygnusEd Professional* by ASDG and *AMICTerm* by AMIC Development. Bill was also showing off **WSHell,** his shell program for the Amiga that supports aliases, piping, an implicit CD, resident commands, **AREXX** and more. **AREXX** and **WSHell** both retail for $49.95 each.

American PeopleLink, (or PeopleLink for short), widely recognized as the online service of choice for Amiga users, was also present in the exhibit hall. Steve Pietrowicz, author of the graphical conferencing program ACO was showing off its full capabilites including the sound effects included in version 3.0. Already over 4000 Amiga users have signed up to PeopleLink, and judging from the activity at the booth, interset is still growing.

The other main development at AmiExpo in the realm of communications was that AMIC Development was demonstrating AMICTerm (based on the award-winning shareware terminal program AMIC PD TERM by David Salas), which is a very powerful commercial terminal program. AMICTerm supports custom graphics commands; for example a circle command that will draw a real circle on the receiver's terminal screen. This feature is a *huge* step from the world of ANSI graphics! AMICTerm should be available by the time you read this, retailing for $59.95.

ASDG also introduced **CygnusEd Professional,** an advanced text editor for the Amiga. One of the dynamite features **CygnusEd Professional** has is support for recoverable documents — the document that is currently being worked on will not be lost due to a crash, even if you have never saved it! Some of the other features in **CygnusEd Professional** include AREXX support, very fast scrolling, support for up to 1000 by 800 resolution, vertical blocks and horizontal blocks, undo, macros and re-definable keys. **CygnusEd Professional** retails for $99.95.

There were a few new graphics software products. Elan Design was showing their software **Invision** which gives those who own A-Squared's Live! digitizer added power. **Invision** adds many more live video effects, including mirror, colorize, invert, strobe, nuke and mosaic effects. **Invision** displays a full keymap graphically, and allows you to custom assign keys and/or mouse buttons to trigger any effect. You can mix up to three pictures at one time. Invision retails for $129.

Syndesis was previewing **Interfont,** which allows you to transform 2D bitmapped fonts, like the Workbench fonts, into an **Interfont** 3D representation file that then can be ported into *VideoScape 3D* or *Sculpt 3D.* **Interfont** fully supports the ColorFonts standard. **Interfont** retails for $119.95 as a stand alone product, or $79.95 as an upgrade to *Interchange.*

Byte-by-Byte, makers of *Sculpt/Animate 3D* announced the arrival of **Sculpt 4D.** Scott Peterson, President of Byte-by-Byte said that **Sculpt 4D** is a high-end professional version of *Sculpt/Animate 3D.* New features include a metal texture, increases in rendering speed, a new scan line algorithm, better anti-aliasing and cleaner images.

Mindware International was introducing **PageFlipper Plus,** which is an animation program with many screen special effects like wipes and dissolves, plus full ANIM support and an interactive script editor with a powerful help system.

Readysoft, makers of *The 64 Emulator* were pre-announcing the Amiga version of the famous videodisc arcade game **Dragon's Lair.** The Amiga version currently spans six floppy disks (and the ReadySoft representative said that number could *increase).* Fortunately, the representative told me that those who have extra memory will be able to load parts of the six disks into RAM for faster play. The Amiga version will be shipping in late October and will retail for $49.95.

Starvision was introducing **World Atlas,** a geographic information and educational database program which provides data on 165 countries. **World Atlas** contains facts on such things as population, religion, money, border countries, industrial and military facts and much more. An editor is provided. The features in **World Atlas** include the ability to perform comparisons between all countries listed in the database over the last ten years. **World Atlas** will be available in October. C

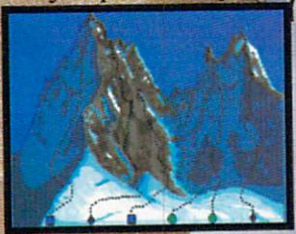


ONE MISTAKE AND IT'S THE BIG PANCAKE.

You're at the foot of one of the world's highest mountains. And you're not snapping pictures. Because this is the FINAL ASSAULT. The only mountain climbing game in the Alps or anywhere else.

IF YOU'RE AFRAID OF HEIGHTS, FORGET IT.

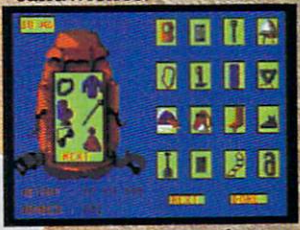
You'll experience the terror and elation of one of the most grueling sports ever. And you'll be tested every step of the way.





Did you pick the right course? (There are six treacherous possibilities.)

What about supplies? If you run out of soup, you'll be stuck with snow sandwiches.



Forget your spikes or ice picks? You could end up a permanent part of the scenery.



If you have nerves of steel, even when you're dangling 40 feet off a cliff, you might just be one of the lucky few to plant your flag at the peak.

To make the stakes even higher, play with an EPYX high performance joystick.

EPYX

Commodore 64/128, Amiga, Apple IIGS, Atari ST, IBM & compatibles. Screens from Atari ST.

THE GAMES:™ SUMMER, WINTER,









You're in Seoul, Korea sweating alongside the world's greatest athletes. Or the Canadian Rockies facing finely-tuned challengers who've waited a lifetime for a shot at the gold.

You're geared up. You're set. You're playing The Games.

SUMMER EDITION:

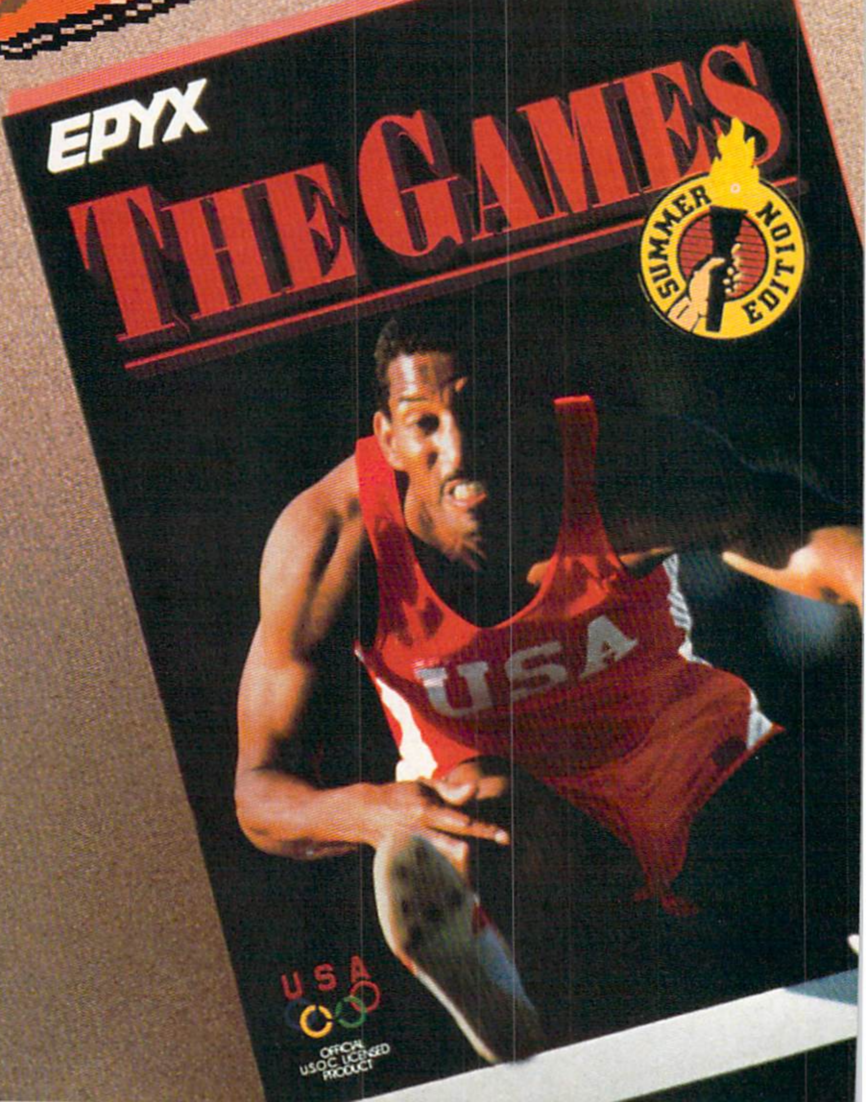
Eight events that test your power, skill and guts.

Relive the heart pounding excitement experienced by the 1988 U.S. Olympic Team.

Sprint down a 110 meter track, clearing hurdles in a fraction of a second. Or jam your pole in the planting box and vault over a cross bar.

Hold a handstand in the Rings competition, straining every muscle in your arms. Follow up with a perfect triple twist in the diving event.

Then try for another medal or two in Sprint Cycling, HammerThrow, Uneven Parallel Bars or Archery. It's your chance to make history.



Lou Sander's Tips & Tricks

Compiled by Louis F. Sander

Here are the very best entries in our world-famous 1988 Programming Contest! First Prize of $100 goes to Karl Johnson III, for his 64 Sixpack Plus. Carlos J. Velazquez wins the $50 second prize for Reach!

IMPORTANT NOTICE: *As submitted, the listing for each contest entry fits tightly on a single screen; many keywords are typed with no spaces between them. But when we prepare the listings for print, spaces are inserted between keywords, to make things easier to read.*

So when you type almost any one of these programs, you will get errors because some lines don't fit the 80-character limit. When you encounter such a line, just delete the spaces between keywords, and everything will be well. Trust me.

Next month, we'll go back to our more usual potpourri of tips and tricks. Send your submissions to:

Louis F. Sander
P. O. Box 101011
Pittsburgh, PA 15237

If you put your name and address on every piece of paper, you'll avoid the heartbreak of being an "Address Unknown."

64 Sixpack Plus: This utility for the 64 gives life to the "dead" function keys, adds a no-scroll feature, and allows quick cursor movement to the bottom-left corner of the screen. It also allows screen color adjustments with easy key combinations.

Written in machine language for speed, Sixpack Plus can be used with BASIC and many machine language programs, including the DOS 5.1 wedge utility program.

Programmers can change the ASCII values in lines 39 and 40 to customize the function key commands. Each can be up to 15 characters long, except for F7 (that one-screen contest limit, you know!). But if you add another line of DATA statements and increase the 204 in line 20, F7 can be made to print longer strings.

Here's a guide to the features:

1. F1 prints the keyword DATA
2. F3 prints LOAD"$",8
3. F5 prints VERIFY"*",8
4. F7 prints LIST
5. SHIFT and SHIFT LOCK act as No-Scroll keys when using the LIST command.
6. [CTRL DOWN] moves the cursor to the bottom left "home" position.
7. SYS 51968 makes the cursor disappear temporarily, letting you use [COMMODORE B] to change the border color and [COMMODORE S] to change the screen color. Press RETURN to get your cursor back when you're finished.

Simultaneously pressing STOP and RESTORE will disable Sixpack Plus; it can be reactivated by executing SYS 51968 or SYS 52005.

Karl Johnson III
Houston, TX

```
20 FOR J=51968 TO J+204:READ K
   :POKE J,K:NEXT
30 SYS 52005:END
31 DATA 72,138,72,152,72,8,32,228,255,
   201,191,208,3,238,32,208,201,174,
   208
32 DATA 3,238,33,208,201,13,208,235,
   169,0,133,198,40,104,168,104,170,
   104,162
33 DATA 58,160,203,142,6,3,140,7,3,
   120,162,70,142,20,3,140,21,3,88
34 DATA 96,72,173,141,2,201,1,240,249,
   104,76,26,167,165,197,201,64,240,22
35 DATA 201,7,240,21,165,215,201,133,
   240,32,201,134,240,28,201,135,240,
   24,201
36 DATA 136,240,20,76,49,234,166,145,
   224,251,208,8,162,24,160,0,24,32,
   240
37 DATA 255,76,49,234,166,154,224,3,
   208,247,56,233,133,10,10,10,10,24,
   105,152
38 DATA 133,251,169,203,133,252,160,0,
   177,251,240,225,32,210,255,200,208,
   246
39 DATA 68,65,84,65,32,0,0,0,0,0,0,0,
   0,0,0,0,76,79,65,68,34,36,34,44,56,
   0,0
40 DATA 0,0,0,0,0,86,69,82,73,70,89,
   34,42,34,44,56,0,0,0,0,0,76,73,83,
   84,0
```

Reach! This is an unusual fast-action game with great play appeal and considerable addictive potential. It lacks color, sound, sprites and graphics, but it sure doesn't lack much else!

In play, single-moving digits appear along the bottom of the screen, waiting for you to launch them by pressing the spacebar. When you press it, the moving digit jumps upward to the top of the screen, where it sticks to the first thing it touches—either the bar at the top of the screen or a previously-launched digit. The object of the game is to amass a high score by positioning the digits along the top bar in optimum positions.

Your score on any "launch" is determined by the launched

Continued on page 125

YOUR BATTLESHIP JUST BIT THE BIG ONE.





Now, you're mad. Really flamed. So assess your losses, aim your guns and turn your enemy into fish food.

ONE OF THE MOST POPULAR GAMES OF ALL TIME COMES TO LIFE ON THE COMPUTER.

As commander of a powerful naval fleet, you'll see destroyers and carriers sinking in a cloud of smoke. Watch planes strafing by so low, you'll practically feel the pilots breathing.





See shrapnel flying through the air like it's the 4th of July, without a picnic.

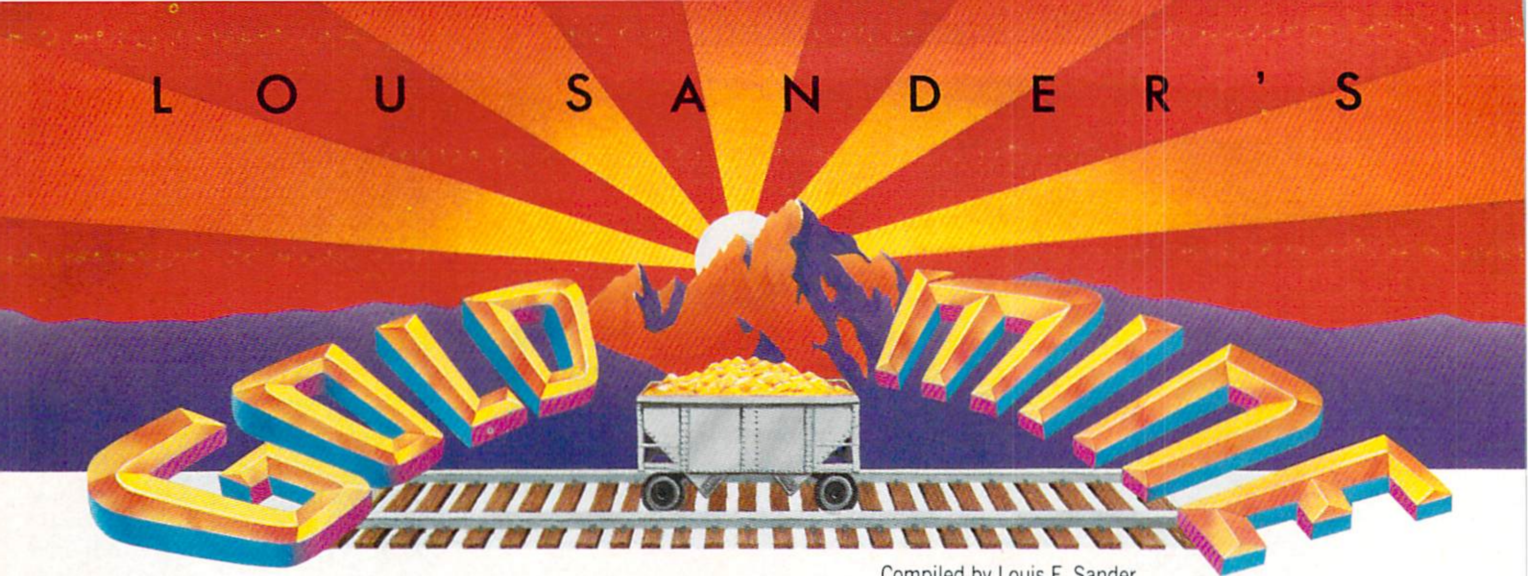
If you're still floating when it's all over, you'll be honored in a glorious, well-deserved victory celebration.



Battleship. So real, you'll taste the salt water.

Sink your opponent faster and easier using an EPYX high performance joystick.

EPYX



Compiled by Louis F. Sander

Here are more wonderful game tips for your 64 or 128. Many of them also work on the Amiga, Atari, Apple or IBM versions of the software. With only a month between issues, we have no way to test every tip that we print. And many of the tips require skill as well as plain knowledge. So don't be too upset if every nugget doesn't work exactly as described.

Send your own game tips to:
The Gold Mine
P.O. Box 101011
Pittsburgh, PA 15237

Use a separate sheet for each game, and combine all tips for one game onto one sheet. Please include your name and address on each sheet. And whatever you do, remember—Gold Mine Rules!

Alternate Reality: The City: A character's experience is gained partly from combat and partly from items found. To advance a character quickly, save your potions; using potions in the same game they are found will often have bad results.
James Jackson
Chicago, IL

Breakthru: On the first level when you get to the tunnel, you can drive up on the wall and you won't be hit by anything in the tunnel! Never touch the ceiling though, as you'll immediately be killed.

On the second level, the lower bridge is easier to cross because it has fewer and shorter breaks.
Doug Cross
Sellersburg, IN

California Games: To score high in Surfing, follow these directions to do a 360-degree turn in the air:

1. Build up speed; get ahead of the "tube."
2. Ride off the wave.
3. Push your button and move the joystick left.
4. Re-enter the wave at the opposite angle you left.

Justin Stephenson
Evansville, IN

Championship Wrestling: Kick and punch your opponent until his energy is low. Give him an airplane spin until the computer automatically drops him. If he is still standing, push the joystick toward him to give him the custom move your wrestler comes with, or give him another airplane spin. When he falls, pin him.
Nathan Jones
Baltimore, MD

Defender of the Crown: When you begin play, Conquer surrounding lands and build up your army, including a catapult, as soon as possible. Once you have a good-sized army, attack one of the Normans. Don't delay in raiding a Norman castle by jousting, raiding and the like, because that gives too much time for the Normans to conquer more land and Saxons.

Don't attack Saxons until later in the game, because they are a great help in delaying Norman attacks.

Also, leave the Norman castle on Cornwall for the last, because it is much easier to defeat and can only attack you on one side. Remember, attacking one Norman at the beginning of the game is much easier than having to deal with all three Normans later.

When jousting, get used to the amount of time that is available to make your shot. When you know when to shoot, press the button while pulling the joystick downward. If you miss, you can sometimes save yourself by lowering your pole and pressing the button. (Remember—don't hit the horse).
Ramon L. Colinavo
Los Angeles, CA

Delta Patrol: Here are some hints for various stages of this game:

Stage 4: Don't shoot the second and fourth attack waves (they decrease your credits). Get the fish weapon, but do not get the protector.
Stage 9: Don't shoot the third and fourth attack waves.
Stage 10: You must get the multiple-fire icon so you can get past stage 12.
Stage 11: Instead of moving around the asteroids, which is almost always fatal, stay where you begin and keep firing.
Stage 12: Kill off the first attack wave; it will get you a credit.
Stage 13: Don't shoot the second and fourth attack waves.
Stage 14: Stay in the middle of the screen and keep firing; you should get 20,000 points or more.
Stage 15: The fifth wave decreases your credits.
Contributor Unknown

Fist: When you enter a room with an opponent who seems too powerful for you, just back out or flip out of the room. When the

opponent's scroll disappears, walk back in. Repeat the process until you think you can beat him.
Todd Gunnerson
Canaan, NH

Gunship: If you enjoy this popular simulation as much as I do, then having even one of your engines shot out can be a real downer. It can happen in any region, from Southeast Asia to Western Europe, and all it takes is one bullet. If this happens to you, and you just can't get the ship off the ground, jettison one or two of your stores (Sidewinders, FFARS, or Hellfires). This lightens the load on the last struggling engine and will allow you to lift off. Happy Flying!
Jason O'Brien
Medford, MA

Hardball!: If you want an edge over the computer in hitting, here is how to get it. First play one-player mode with no Alt. Be the visiting Champs. Substitute your pitcher for a non-pitcher such as O'Brien. Then exchange positions with O'Brien and Darien. Substitute Darien in pitching mode with another pitcher like Moulini, then switch O'Brien with another second baseman like Jimenez. The result is that the pitcher has to bat for the computer, but your pitcher doesn't hit. Darien hits instead!
Thomas Obarowski
Kew Gardens, NY

Karateka: On the second level entering the castle, a bird comes out before each new guard and takes two arrows unless you defeat him. When the music warns he's coming, try switching to keyboard mode. This will give you an advantage, since the keyboard is more responsive than the joystick.
Jay Locklear
Address Unknown

Kung Fu: On the fourth level there is an easy way to kill the Evil Twins: punch the one on the left in the stomach.
Contributor Unknown

The Last Ninja: In the Wilderness cross the Wastelands and kill the Samurais before you cross the water. Then when you get the Magic, you won't waste time killing your enemies.
Tom Moore
Schererville, IN

Legacy of the Ancients: A Sapphire Coin and a Jeweled Crown are located at the bottom of the Pirate's Lair Dungeon. The Sapphire Coin is used to open the Lost Displays, which allow you to go to the Pegasus, the Fest and the Four Jewels Dungeon. The Jeweled Crown is used the next time you speak to the caretaker—he will give you an Iron Key.
Peter Liang
Ann Arbor, MI

Legacy of the Ancients: The Seeds are located south of the Tulip in the Castle. When you use them, the Seeds will allow you to be invisible so you can escape. However, if you attack a Guard or open a Chest while you are invisible, the effects of the Seeds will wear off.
Peter Liang
Ann Arbor, MI

Continued on page 124

Reviewed by Scott A. May

The Games: Winter Edition

Computer: Commodore 64
Publisher: Epyx
600 Galveston Drive
Redwood City, CA 94063
Medium: Disk
Price: $39.95

Charged with the Olympic fever of Calgary and Seoul, Epyx presents *The Games: Winter Edition*. On the heels of five successful titles, the tradition continues.

Although it repeats some events from the previous *Winter Games,* this is much more than just a rehash of that title. Included here are seven events, newly designed in cooperation with former U.S. Olympic Team members. It is also the first computer game to be licensed by the U.S. Olympic Committee.

In less creative hands, so many variations on a single theme would spell software overkill. But Epyx keeps the competitive spirit as fresh today as it was five years ago. As always, it's a mixed bag of good and bad, some events stronger than others. But taken as a whole, these selections represent an invigorating challenge on par with the best of the series.

Once again up to eight players may compete in *The Games,* each representing a country of their choice. Following the exceptionally well-crafted opening screens, players are presented with the familiar options menu. Here you may compete or practice any or all events, view the World Records, select number of joysticks and view opening/closing ceremonies. When all players have signed in, *The Games: Winter Edition* begins.



The Luge

The luge is to a bobsled what a jet is to an airplane. Players compete one at a time in this event, choosing from four unique tracks of various difficulty.

Eye/hand coordination means everything in this fast-moving event. Scoring is based on speed, and speed is achieved by keeping the luge dead center in the track. Three meters at the bottom of the screen—steer, drift and position—monitor your movements.

Despite the detailed graphics and animation, players should control their luge with the meter display. Use your peripheral vision to watch for curves in the track and changes in direction.

Included here are seven events, newly designed in cooperation with former U.S. Olympic Team members.

The event breaks from realism with the inability to crash your sled—going over the edge or simply toppling in the middle of the track. Knowing you can't crash removes some of the thrill.

Cross Country Skiing

This event allows one player to compete against a computer pacer or two players to face off head-to-head. Players are given a choice of 1, 2 or 5 km runs.

Here players are introduced to the familiar "rhythm method" of joystick control used repeatedly in the Epyx *Games* series. The key to success is to simply move the joystick right and left in conjunction with your on-screen skier's legs. Holding the fire button causes the skier to "step up" when losing ground on hills and "double pole" when descending.

Speed and endurance are the name of this game. Not exactly a thrilling event, players should select the longest course for the greatest challenge. In spite of beautiful graphics and animation, it still pales in comparison to the Biathlon event in *Winter Games.*

Figure Skating

This beautiful and complex event is unfortunately the game's weakest.

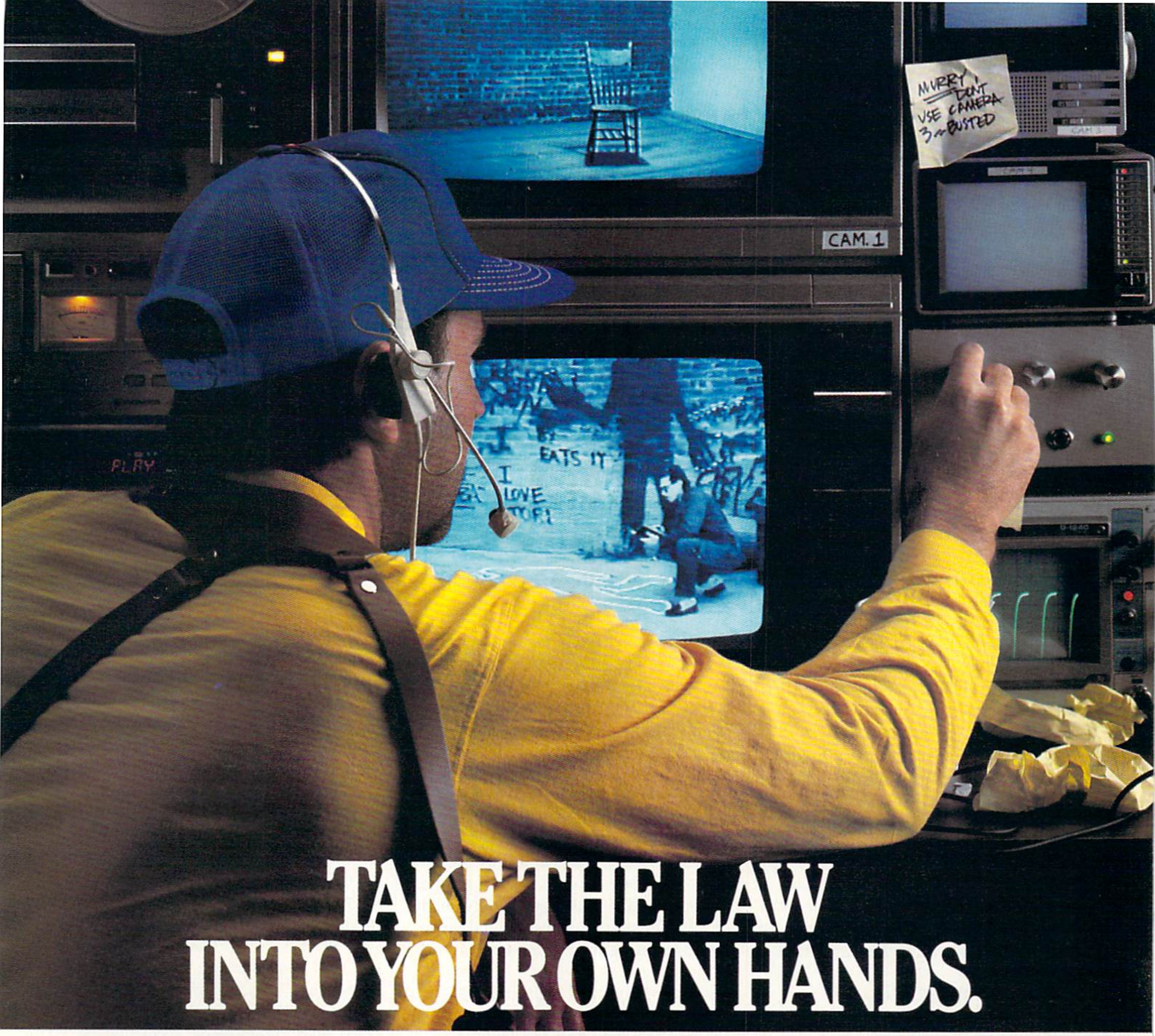
Players custom design their own routines, beginning with music to skate to: fast, medium or slow; rock, jazz, romantic and new wave. Next, as the music plays in the background, choreograph your routine from the eight moves available. Up to ten individual moves may be performed in a single routine.

After mapping out your performance, move to the arena and recreate your masterpiece on ice. The animation here is absolutely perfect, featuring a graceful female skater spotlighted before an anxious crowd. Even the shadow cast by the light shifts and changes effortlessly.

Pretty graphics do not make a great event, however. Figure Skating suffers from a number of flaws. The most apparent is weak documentation, which manages to stumble all over itself trying to explain the impossible. And what it doesn't want to explain, it simply leaves out. None of the skater's moves, for example, are even mentioned in the manual.

What must have sounded good on paper went woefully awry on the computer screen. Players are required to memorize when each move is to be executed in time with the music. Unfortunately, all players choreograph the routines one after another. By the time the last players hit the ice, they have little hope of remembering their moves, let alone *when* to execute them.

Continued on page 108



What can you do about the drug problem in America? Play *L.A. Crackdown.* That's what. You're the veteran detective. Your assignment is to uncover a major ring bent on distributing an evil synthetic drug.



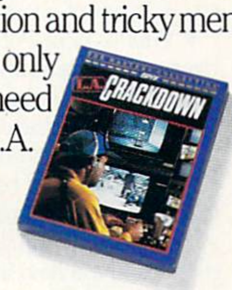
You can bug the thugs and watch the warehouse, both at the same time.

You've got the highest of high-tech surveillance vans to work from. You've also got a rookie to work with. We're talking "rookie" rookie. Zero experience.

You'll need to architect his every move. Watch him photograph clues. Plant bugs. Tail suspects. And question everyone from seedy thugs and crooked chemists to slick international heavies.

You'll also need to draw on every strategy brain cell available. If you're not thinking every minute, you might just spend all evening waiting on a street corner for a suspect who's never coming.

L.A. Crackdown. If you think your nervous system can handle the surprise action and tricky mental clues, there's only one thing you need to do. Move to L.A.



L.A. CRACKDOWN
BY EPYX

Commodore 64/128, IBM & compatibles, Apple II & compatibles

Reviewed by Mark Cotone

Force 7

Computer: Commodore 64
Publisher: DataSoft
19808 Nordhoff Place
Chatsworth, CA 91311
Medium: Disk
Price: $19.99



If imitation is sincerely a form of flattery, then I bet I can name a couple of entertainment entrees that software programmer Ken Grant is absolutely crazy about. Mr. Grant is the designer of a new action-strategy game from DataSoft called *Force 7,* and after a session or two with his contest, you'll probably get the feeling that he's spent more than a few afternoons at the arcade hall feeding quarters to a *Gauntlet* machine, and more than a few evenings at home running and rerunning a copy of the *Aliens* movie through his VCR. For if you were to fuse these two divergent hits together, you would get the look and feel of *Force 7.* And it's quite an exciting combination.

The game's action takes place on Karis, a fictional planet out in the far reaches of the galaxy. A few months ago Karis sent out an urgent distress signal, but before any concrete details could be related about this assault, communications suddenly went silent. Duly alarmed, you, the commander of *Force 7,* a special crack combat unit, hustled your troops into the hibernation capsules of a waiting star ship and blasted off to solve the Karis mystery.

The floor plan is a maze of rooms, corridors, doorways and dead ends infested with the most bizarre variety of grotesque killers imaginable.

As the game begins, you and your crew of six have just shaken off the cobwebs of the suspended animation sleep. Your goal is to search and rescue any and all of the planet's human inhabitants who may have survived. As your team is preparing to teleport to Karis' surface, an alarming discovery is made. During travel, it appears as if your ship encountered a dense meteor storm, destroying all but a single life support suit. This means that only one team member can beam down at a time, an unfortunate twist that severely heightens the danger of the mission and conveniently transforms the game into a workable one-player contest.

On Karis, the search will center on a six-level fabrication plant, the only stronghold where colonists could have possibly survived. The floor plan is a maze of rooms, corridors, doorways and dead ends infested with the most bizarre variety of grotesque killers imaginable. Not only must you work at plotting a course to the endangered humans, but you will also have to find some way of blasting or dodging a never-ending swarm of invaders intent on having you for lunch.

The most common enemy will be the Alien Soldiers, relentless crab-like creatures that move in patterned masses, converging and cornering any crew member who happens into their line of sight. Backing these killers are groups of breeders named Beating Hearts, repulsive-looking monsters whose only known purpose is to spawn more murdering Soldiers. And even in death this enemy remains dangerous, for when they are killed their acid look instantly burns holes clear through the floor; smoldering cavities whose mere touch can mean lights out. Frightened? Wait. The fun's only beginning.

Even more puissant are a flock of indestructible bubbling balls of fire known as Lava Monsters. These hall monitors roll around trying to catch you and fry you alive. And then there's the most threatening menace of all, the Alien Leaders. Insect-like freaks looking remarkably

Continued on page 112

Alien Nation Annihiliation

Improving Force Score

Before you go and blindly lead your crew into a disastrous death trap, take a moment or two to devise a tactical game plan. Reflexes alone will not beat these alien breeds. The *Force 7* instruction manual includes a Strategy section which is sure to lay a good foundation for maneuvering and attacking. Below, I've also added a few tips of my own to help you along.

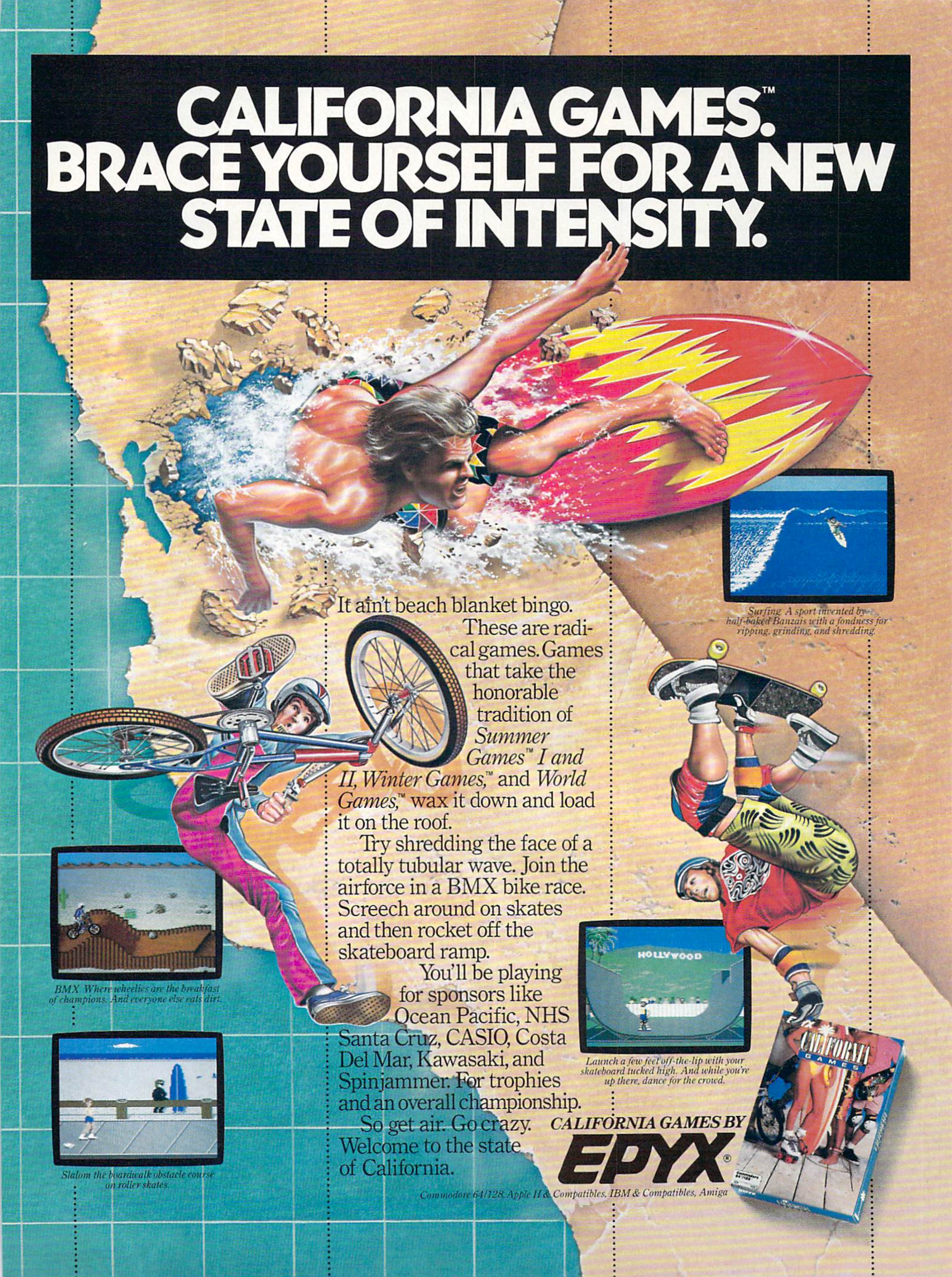
• Whenever one of your surrogates happens upon a room filled with ammunition or food, take the time to bring down each member of the crew so that they can all eat their fill and reload their weapons. Your prudence will be rewarded during crunch time, when you don't have to worry about anyone being fatigued or low on supplies in the heat of battle.

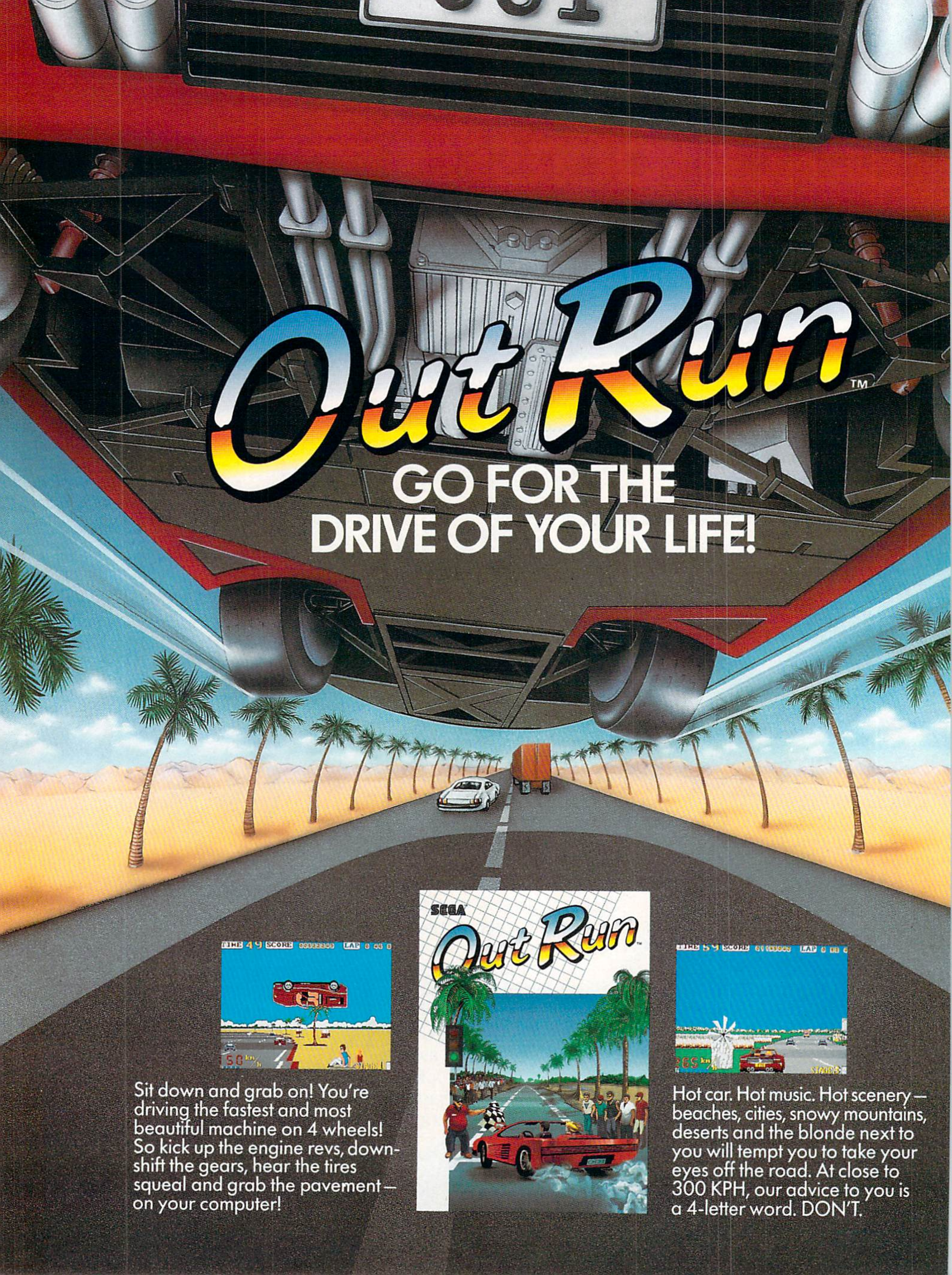
• Although Alien Leaders can materialize anywhere—with a penchant for showing up at the most inopportune times—their enormous size prohibits them from pursuing your men through a doorway. Whenever your Motion Detector warns you of an approaching Leader, move inside a room, fend off any menaces that might be roaming about, and wait by the door. If the Leader appears in the room with you, quickly duck out into the hallway and shoot back through the open door to cut him down. If, on the other hand, the Leader rises outside the room, simply remain stationary and use the same doorway from your inside position.

• In this rescue mission, although you are obviously trying to keep all of your soldiers healthy, it is vitally important that you remember to keep at least one of the three crew Blueprint Readers alive. Without their assistance, it is impossible to be teleported from floor to floor. In extreme cases, it may even be necessary to sacrifice another soldier to protect your last Reader. It may sound cruel, but the alternative is a failed mission.

• When you are teleporting onto a new level for the first time, always drop yourself into an area that affords some protection and/or escape routes. Who knows what will be waiting for you when you materialize? Ammunition supply rooms and food storage areas are labeled on the overhead computer maps and are usually one of the safest bets.

• This final point is mentioned in the manual's tips, but it's important enough to be reiterated. Whenever you enter a room full of Alien Soldiers, you can be sure a reproducing Beating Heart is at work nearby. She should be the number one priority for destruction. Only after you track and annihilate her will the Alien Soldier generating stop.


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It ain't beach blanket bingo.
These are radical games. Games that take the honorable tradition of *Summer Games™ I and II, Winter Games,™* and *World Games,™* wax it down and load it on the roof.
Try shredding the face of a totally tubular wave. Join the airforce in a BMX bike race. Screech around on skates and then rocket off the skateboard ramp.
You'll be playing for sponsors like Ocean Pacific, NHS Santa Cruz, CASIO, Costa Del Mar, Kawasaki, and Spinjammer. For trophies and an overall championship.
So get air. Go crazy. Welcome to the state of California.
Surfing. A sport invented by half-baked Banzais with a fondness for ripping, grinding, and shredding.
BMX. Where wheelies are the breakfast of champions. And everyone else eats dirt.
HOLLYWOOD
Launch a few feet off-the-lip with your skateboard tucked high. And while you're up there, dance for the crowd.
Slalom the boardwalk obstacle course on roller skates.
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Commodore 64/128, Apple II & Compatibles, IBM & Compatibles, Amiga
CALIFORNIA GAMES

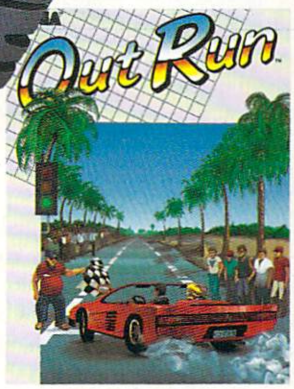

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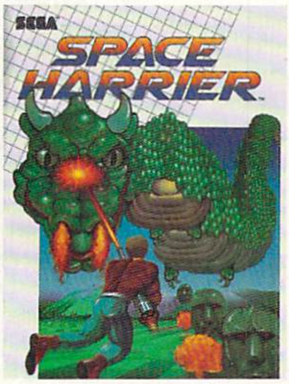


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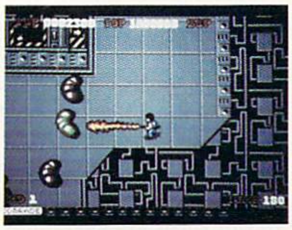












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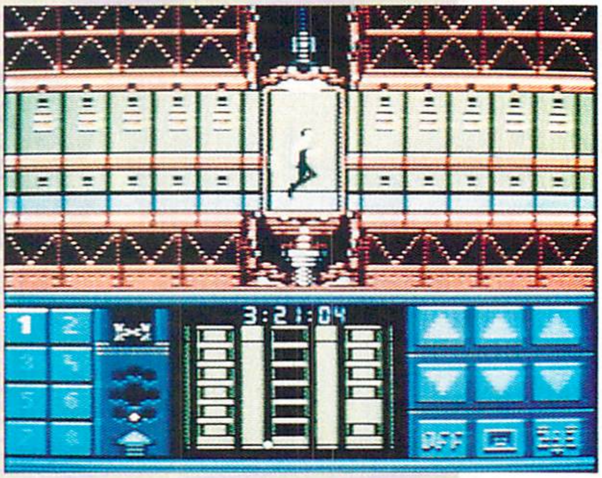
Visit your retailer or call 1-800-221-9884 for VISA and MasterCard orders. To purchase by mail, send your card number and expiration date, check or money order for $34.95 (Out Run), $29.95 (Space Harrier and Alien Syndrome), (C64 & C128), and $49.95 (Out Run and Space Harrier), $39.95 (Alien Syndrome), (Amiga and Atari ST), (plus $3.00 handling to Mindscape, Inc. P.O. Box 1167, Northbrook, IL 60065. Allow 3-5 weeks for delivery. Lawyers like this part: Screen shots represent Atari ST version; others may vary.

Reviewed by Jeffery Scott Hall

Impossible Mission 2

Computer: Commodore 64
Publisher: Epyx
600 Galveston Drive
Redwood City, CA 94063
Medium: Disk
Price: $29.95

Impossible Mission 2 combines a unique blend of strategy, arcade action, graphics and sounds to come up with one of the best game sequels ever.



Just when you thought you had saved us from the evil mastermind Elvin, along comes *Impossible Mission 2* from Epyx, and this time he is planning to take over the world! While the title screen is displayed, you will hear Elvin's sinister greeting: "Another visitor! Stay a while, stay forever!" accompanied by excellent background music. You, as the agent's top sleuth must enter the high-rise complex and stop Elvin from destroying us all!

Not Just Another Deranged Lunatic

When you think of Elvin two words come to mind: psychotic genius. He is smart enough to be the leading expert on robotics, computers and codes, yet evil enough to want world dominance. Therefore, he is entrenched on the top floor (probably because of the lack of oxygen to his brain) of an eight-story "tower-of-doom."

Inside this tower Elvin has constructed his own rooms laced with six different kinds of robots: security (shoot high electrical beams at any movement near him), minebots (drop mines which detonate when stepped on), pestbots (ride lift platforms to mess up the player's strategy), squatbots (use them as stepping stones to leap higher in the air), bashbots (will either push you off a ledge or smash you into an object), and suicidebots (the same as a bashbot, but will kill itself with you). To top everything off, each room is a maze in which you must maneuver to find certain important objects vital to your mission. So just what is your mission?

An Agent's Job is Never Done

When you first start the game, you will find yourself in one of four different passages inside Elvin's tower of doom. Each passage contains six different floors, in which you will find one room to explore. You must ride an elevator to get from floor to floor. Your job must be carried out in four parts (as if one weren't enough), each vitally important to the next.

First, you must assemble a three-digit security code for each passage connecting to a different area of the tower. Do this by standing in front of an object in a room while pressing the joystick forward. This causes a box to appear over the agent's shoulder with a horizontal time line indicating how long the search will take for that particular object. Once the search is complete, you will find a passcode number, a security terminal command icon, an extension of time, or you might wind up empty handed.

Second, you must seek out and open Elvin's safes and recover the musical sequence which is locked inside. You will find six different pieces of music located throughout the complex and two duplicate pieces to throw you off guard. Once you have a musical sequence, you must either record it before moving to the next passage or lose it forever (thus preventing you from completing the game).

Third, you must tie these musical sequences together to form a full melody which opens the express doors to an elevator that will lead you to Elvin's main control room.

Finally, you must find the correct computer terminal in Elvin's control room that will disarm the missile launch codes before the world (and you) are destroyed!

Sounds simple enough for someone with your qualifications, right? Oh, but we've overlooked one important detail: time. All of the above-mentioned requirements must be completed before the missiles launch, allowing you precisely eight hours to stop them. If all of this sounds just too difficult (wimp!) then perhaps we should take a closer look at our best friend.

The Pocket Computer

Lucky for you the agency knew what they were up against when they asked you to stop Elvin. They have equipped you with a highly sophisticated pocket computer with many great functions to help in your quest. Your pocket computer can perform the following functions: locate you in Elvin's complex by showing your current position, help you assemble the passcode which allows you to move from one passage to another, record and play back musical sequences, and show exactly how much time you have to complete the mission. Just how secure are you?

Your Security Blanket

Inside each room Elvin has constructed, you will find at least one security terminal to help make your life less stressful. To activate a terminal, stand in front of it and press the joystick forward. This will call up the security screen with six different options. These are: reset lift platforms, move floor segments left or right, deactivate robot(s), turn lights on in darkened

Continued on page 66


Red Storm Rising™
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Paperclip Publisher

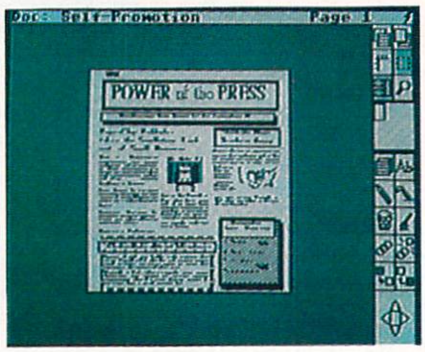
Computer: Commodore 64
Publisher: Electronic Arts
1820 Gateway Drive
San Mateo, CA 94404
Medium: Disk
Price: $49.95

Desktop publishing is an application that taxes a computer's memory and processing power as much as any database or spreadsheet program. Just imagine the calculations required to keep 50 pages of text and graphics in current memory while accurately displaying page layout on your screen and quickly refreshing the on-screen image to reflect changes to either element. Considering the inherent limitations of a 64K, eight-bit machine like the Commodore 64, some would argue that desktop publishing is an application better left to more powerful personal computers. Fortunately, the designers of *Paperclip Publisher* realized that, despite a few limitations, the 64 is a machine that, programmed creatively, can handle almost any job.

Paperclip Publisher comes with a clearly written, well-organized manual that introduces you to the program and takes you on a "guided tour" of its major features. Five tutorials are included to take you from the initial design of a newsletter, to finishing touches and, ultimately, to cranking it out on your printer. To help you get started, sample text files are included on the program disk, as well as several examples of clip art. In addition, five fonts—Courier, Helvetica, Times, Sideways and Symbol—each in four sizes, are included with the program.

After making a back-up copy of the program disk (*Paperclip Publisher* is not copy protected), specify the printer you'll be using, and creating a work disk, you can begin to design and lay out the pages of your publishing project. Your page can be either letter size (8″ × 11″) or legal size (8″ × 14″), or you can specify a custom page size (smaller than 8″ × 14″) by clicking on length and width arrows that alter the page size in ¼-inch increments. (The smallest page size you can create will depend on your choice of a default printer.) Similarly, vertical and horizontal margins can be adjusted in ¼-inch increments by clicking on a second set of arrows.





Fortunately, the designers realized that, despite a few limitations, the 64 is a machine that, programmed creatively, can handle almost any job.

Before adding text or graphics to your blank pages, you must create boxes into which your page elements will be poured. Like most *Paperclip Publisher* functions, boxes are created by selecting the appropriate tool or icon from the right side of the screen. The length and width of each box can be easily adjusted to create columns and graphic frames of any size. The boxes you create to hold text can be linked together so that text will flow appropriately from column to column, and even from page to page. While *Paperclip Publisher* can handle documents of up to 50 pages, a single document may contain only 60 boxes, so for practical applications your document's maximum number of pages will usually be considerably less than 50.

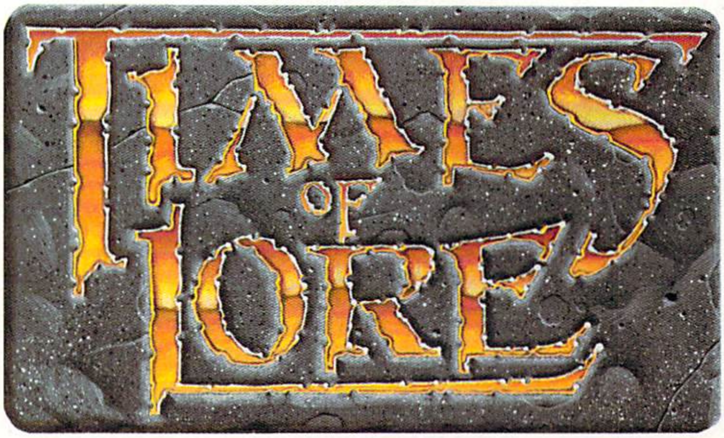
The text you use to fill your boxes can be prepared in advance using any of several popular word processors, or created with the program's built-in text editor. While the text editor isn't designed to take the place of your favorite word processor, it does provide a simple means to enter and edit short passages on the fly. It is here in the text editor where you may also add bold, italics, underlining, superscripts, subscripts and several other useful and decorative enhancements to your text files. What's more, headlines of up to 250 characters can be added using the program's "Quicktext" tool.

Likewise, although graphic elements can be pulled into your documents from a variety of programs such as *Newsroom, Outrageous Pages,* and *PrintMaster,* there is a simple graphics editor included with *Paperclip Publisher*. While this is great for touching up and resizing graphics before inserting them into your documents, you'll probably want to use a more sophisticated graphics program to produce any complex drawings from scratch.

With *Paperclip Publisher,* besides simply drawing a bunch of boxes and filling them with words and pictures, you can choose from a wide variety of background patterns, border styles and styles of text alignment, and these attributes can be set individually for each box. Unfortunately, whatever attributes you assign to a box, you can never change its square shape. Therefore, text can't be wrapped around irregularly shaped graphics.

The only other complaint I have about *Paperclip Publisher* is the trade-off that you must make between speed and the on-screen display of your pages. If you choose to have all elements within your boxes displayed on-screen as you edit the layout, each box has to be redrawn and every text or graphic file used on the current page has to be reloaded from disk and redrawn. Needless to say, having to wait for all this to occur each time you make a small alteration can quickly kill any creative spontaneity you may have had at the outset of a project. Once the contents of each box have been formatted to your satisfaction, however, you can choose to display only the boxes without their contents as you make fine adjustments to the layout. While it would be great to see all of your page elements while making these changes, the speed you gain by emptying the on-screen boxes is often more important than seeing the contents of all boxes at all times.

No matter what type of desktop publishing system you use, creating a professional-quality newsletter takes careful planning, an eye for attractive design, and much hard work. If you can supply these, then *Paperclip Publisher* can provide the tools you need to get the job done.



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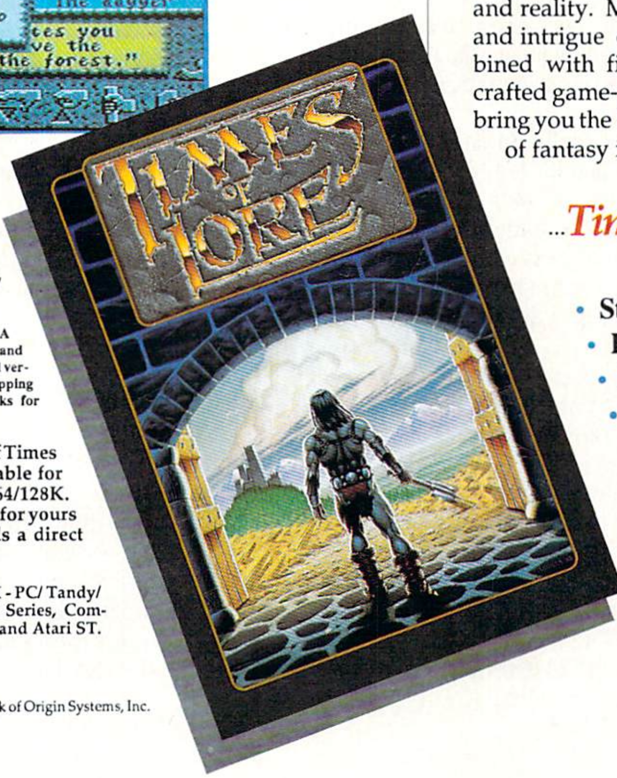
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ORIGIN™

136-B Harvey Road,
Londonderry, NH 03053

Reviewed by Mark Cotone

Dragon's Lair

Computer: Commodore 64
Publisher: Software Projects, Inc.
Distributor: Electronic Arts
1820 Gateway Drive
San Mateo, CA 94404
Medium: Disk
Price: $19.99

It doesn't seem that long ago, but it was way back in '83 when Don Bluth's *Dragon's Lair* coin-op burst onto the scene, igniting choruses of oooh's and aaah's from wide-eyed video players everywhere. This was a time when arcade audiences were starting to thin out, tired of finding the same hackneyed game ingredients hidden behind thin facades sporting little more than creative titles and imaginative window dressing. But this newcomer was going to turn the tide and demand attention by exhibiting some extraordinary guts. For behind the knobs, glass and wood of this game's cabinet was a revolutionary computerized videodisc system, a game foundation unlike anything else that had ever swallowed a quarter.

But that was five years ago, and the fervor has since subsided. Can you still remember Daphne, Dirk and Singe? Did you ever even meet them? Well, whether these names evoke fond memories or draw complete blanks, Software Projects, Inc., with the distributive help of Electronic Arts, would once again like to make them the topic of players' discussions. With their new *Dragon's Lair* release for the Commodore 64, the famed adventure is back for more.



For the uninformed, let me introduce the principal cast. Daphne is the beautiful daughter of a wealthy unnamed king in some faraway fantasy land. Singe is a demented, greedy dragon who has just kidnapped Daphne, threatening to kill her unless he receives the proverbial king's ransom. And then there's Dirk the Daring, your fearless surrogate knight who has always admired Daphne from afar, and is now willing to risk everything to save her soul. Isn't love grand? Singe, a crafty creature, has taken his royal bait and imprisoned her in the secret caverns carved deep beneath his enchanted castle. In his rescue attempt, Dirk must battle his way through a fortress filled with Singe's henchmen, creatures and traps, ultimately facing the old fire-breather himself in a climatic underground showdown.

The confrontations that stand between Dirk and his lady are some of the most outrageous trials ever to measure the depth of love-fueled endurance. Seventeen different tests of strength, dexterity and perseverance have been devised, each presented as a distinct arcade game within the game. It's a grueling gauntlet. In a walk through, purists might note that not all of the original challenges have survived the transition. But the ones that have been chosen for the adaptation bring home, in one shape or another, some of the more memorable moments from the original. There are white water rapids to be rafted, flying horses to be tamed, enemy knights to be vanquished, falling platforms to be flown and raging infernos to be crossed—just to name a few of the awaiting tasks. The computer renditions might differ somewhat in appearance and/or perspective from their coin-op counterparts, but the designers, working within the parameters of their medium, have certainly succeeded in capturing the spirit of each match.

Dragon's Lair's draw has always been its unique look, but when judging visuals, it would seem impractical to measure the computer version against its videodisc predecessor. They're two different style machines. But even when you compare its performance against other Commodore games, Software Projects' offering is still a mixed bag. On the whole, the background graphics are superb, providing a variety of clear, colorful environments for all of Dirk's antics. Crisscrossing cobwebs, etched stone hallways and boiling mud ponds are just some of the specifics that deserve applause for bringing each scene to life. Yet, when judging the animated action that is portrayed across these backdrops, sometimes the designers fall short. Every so often, Dirk's moves tend to become extremely jerky, trading off any illu-

Continued on page 112

Burning Singe: Taking a Fire Breather

One of the biggest advantages the computer version of *Dragon's Lair* has over the original is that Software Projects actually packages an instruction pamphlet to help outline the goal in each of the game's 17 stages. Refer to your instruction pamphlet for some useful background any time you enter a new stage. And if you still get stuck, perhaps one of the tips I've listed below will be of some assistance.

- **Falling Platforms:** Always return to the platform's center after each gust. This will put you in a ready position for wind from any direction, and also afford you the most room for error if you're caught off guard and blown backwards.
- **Burning Rope:** Remember, it's up to you to leap off the stone elevator as it takes you up to each level. If you miss your floor, you're more than likely to get burned.
- **Ramps and Giddy Goons:** You don't have to be on the same ramp as a goon to give him a fatal taste of your sword. Whack one of these weirdos from an adjacent ramp, and it'll make jumping a lot less hazardous.
- **Ye River Caves:** When you get to the river's whirlpools, pull your joystick back as you enter each new screen. This will buy you some extra time to survey the situation and plot a course.
- **Dungeons of the Lizard King:** Unless the very tip of the Lizard's jeweled cane makes contact with your head, you can't be harmed. So if the Lizard is closing in and winding up for a hit, quickly turn and move into him. This will put you inside the cane's swath and out of danger. Then, when he relaxes, run like hell.
- **Magical Flying Horse:** If you can't react quickly enough to avoid the oncoming obstacles, push your joystick all the way to the left and hold it there. This seems to put Dirk in an invulnerable position for a free ride to the next level.
- **Mud Monster:** To cross the gorge, see if you can't draw the wrath of the biggest Monster on the block. In this case, a little mudslinging could be beneficial. ■

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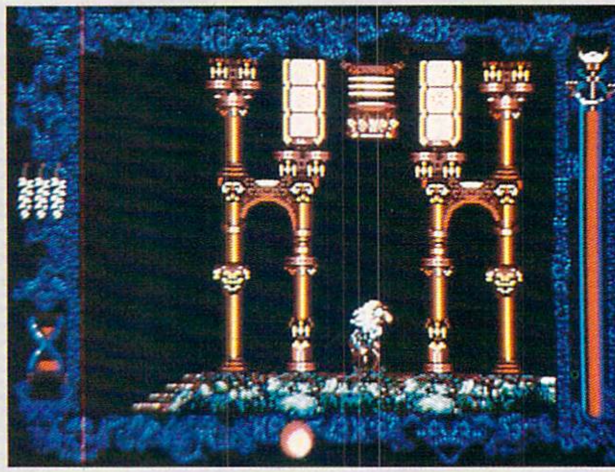
Reviewed by Jeffery Scott Hall

Vampire's Empire

Computer: Amiga
Publisher: DigiTek Software, Inc.
104 W. Seneca
Suite 4
Tampa, FL 33612
Price: $44.95

It is late at night when you discover the Count's lair, finally you have located the evil underground "Doom-of-Gloom." As you open the door, a cold chill envelopes your body. Gazing down into the lair you see nothing, yet you know that evil is all around. You quickly check your supplies: a handful of garlic, reflective mirrors and a magic ball. Then you go down the stairs to set out on your quest. This is the setting for *Vampire's Empire* from DigiTek Software.

The game is divided into 240 screens and can be thought of as one giant underground maze!



The Quest

You are Dr. Van Helsing, vampire hunter, who has vowed to rid the Earth of Count Dracula himself. Sounds like a simple job for a man of your standards, but one thing that will not be simple is the control of that mystic light—which is required to kill the Count. In your journey you will also find many vile creatures which will try to stop you from completing your mission. These creatures range from ordinary love-crazed ugly female vampires to the not-so-ordinary ghouls hanging from the ceiling, not to mention the trap doors. The object of the game is to find Count Dracula and destroy him. Sounds simple right? Wrong! In order for you to do so, you must have full control over the magic light. To do this you must position mirrors in the proper places throughout the game in order for the light to reach the Count. If you find Dracula without the magic light, then prepare to be drained!

Game Play

You will find yourself exploring different areas of the game, ranging from the upper to lower regions. As you walk along, the screen will scroll in the direction you are going. Soon you will meet up with some of the evil characters. To ward them off, throw garlic at them (by pressing the fire button in the direction you are going). If you do not succeed in throwing the garlic at the right time, the evil creatures will drain your blood. Your blood supply is indicated at the far right of the screen. The game will end when you have been drained of all your blood (ouch!), and you will find yourself starting over.

To advance from one level to the next, you must collect certain artifacts, climb up ladders, go down slides and even fall through some trap doors. Depending on which level you are in, certain things must be done to advance. In some cases you will find yourself wandering around in a circle. To get out of this, you must touch a certain area of the wall, collect all the artifacts for that level, and fall through certain traps.

The game is divided into 240 screens and can be thought of as one giant underground maze! When you do reach Count Dracula, the screen will be enlarged, so you see close-ups of both the Count and Dr. Van Helsing while scary music plays in the background. This is the grand finale of the game; it must be seen to be appreciated.

Summary

I found three minor faults with *Vampire's Empire*. The first and most important is the fact that they left out a pause feature in the game. This can cause some serious problems when you want to take a break and the monsters are all over you.

Second, I would have liked the title music playing throughout the game instead of no music at all (even better would have been the option to toggle music off/on).

My third complaint has to do with the way Dr. Van Helsing throws garlic. Instead of his arm appearing to pull back to throw it, it seems as if he spits at them (it's quite humorous to see). However, these are just minor complaints, I found many good points as well.

Vampire's Empire is a very exciting arcade-style adventure game. The graphics, music and sound effects are very nicely done. The screens scroll very smoothly—truly a plus! I have had a lot of fun playing *Vampire's Empire*, and I think you will too. So, if you are looking for a frightfully good game, this one is it!

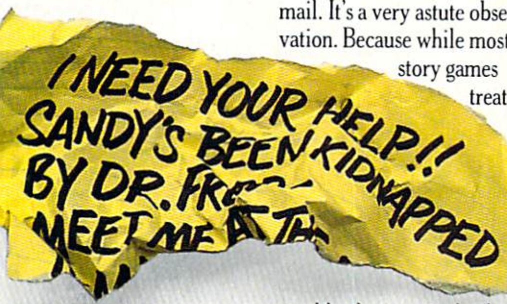
Vanquishing the Vampire

- Never stand in one spot for a long period of time. If you do, the monsters will find you and will drain much of your blood. To avoid this, move Dr. Van Helsing every few seconds.
- Avoid getting artifacts that are on trap doors. These artifacts are "dummies" and will only make you fall through the trap. If you fall through, the artifact will still be there. Don't worry, it's not needed to complete your quest.
- If you ever find yourself wandering around in circles, then you have either not collected all the artifacts or touched a secret door. So make sure all artifacts have been collected for the level you are in and explore carefully.
- Make sure that you are in the same level the light is at all times. This is very difficult to do, but if you lose the light, you can not destroy Dracula. C

NEW HOPE FOR BATTERED STORY GAMERS.

"THERE'S A LOT I LIKE about computer adventures, but it sure isn't fun getting killed all the time. That's why *Maniac Mansion* is so refreshing — I can play from start to finish without dying once!"

That's more than great fan mail. It's a very astute observation. Because while most story games treat



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The fun starts with an engaging plot, hot graphics and tasty puzzles. But what keeps it going is a unique design that lets you play the game instead of fighting the computer.

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Just three "clicks," and you'll send *Zak McKracken*™ over to the pawn shop counter to buy a pair of nose glasses.

interface, in most cases, remained in the swamp.

With conventional story games, whenever you want your character to do something, you type. And type. And type.

Suppose you want to pick up a green leafy object. Well, you might try typing, "pick up plant." If that doesn't work, you might try "bush," "shrub," "tree," and so on. After a while, you might try a different form of entertainment.

Not with Lucasfilm's new "point 'n' click" interface, though. All the words you need are right on the screen. Just click the cursor on them to choose characters, objects, and actions.

Now you can play an entire fifty hour game without typing a single word. Or putting your life on hold until you realize the green leafy thing is a...plastic fern.

MORE STORY. LESS GORY.

Most story game designers seem to think people love to get clobbered.

We don't. After all, how much fun can it be to have a fatal accident every three and a half minutes...then reload your saved game, take a few timid steps forward, and save it again. Seems more like paranoia than entertainment.

That's why Lucasfilm story games make it downright difficult to die. Oh, you'll get into major hot water all right, but you'll have the fun of getting out of it, too.

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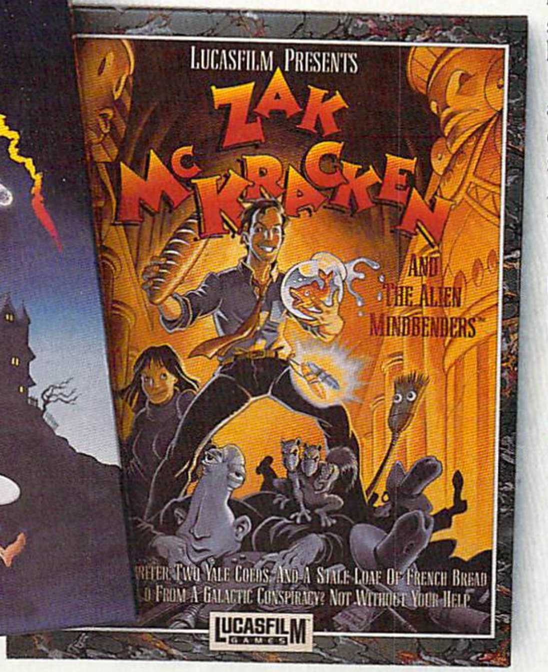
scientist, and a hilariously creepy rescue mission.

Or *Zak McKracken And The Alien Mindbenders*,™ where you and a seedy tabloid journalist save the world from space aliens who want us all to have the IQs of turnips.

You'll love the twisty plots and the goofy characters. You'll crack up constantly with the zany one-liners and sight gags. And you'll go just a little crazy with the mind-bending puzzles.

Crazy, but nicely crazy.





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Reviewed by Ervin Bobo

Softwood File IISG

Computer: Amiga
Publisher: Brown-Wagh Publishing Co.
16795 Lark Avenue
Suite 210
Los Gatos, CA 95030
Price: $99.95

If there were only one good thing to say about *Softwood File IISG*—or about any of its previous incarnations—it would be that this program makes the concepts of database management easily understandable.

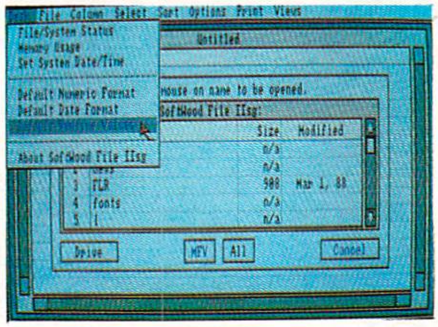
Almost two years ago, when many software and hardware manufacturers were trying cutesy-poo variations in naming their products, one of the first database managers was called *MiAmiga File*. A revised and improved edition followed in the form of *MiAmiga File II*. Perhaps the Softwood Company, producers of all three titles, suddenly realized that a good product doesn't require a cute name.

Softwood File IISG (a title that may unfortunately cause some to think it's for an Apple computer), gives you the ability to store not only written information, but sound and graphics as well.

With any database manager the first thing to do is to set up a format for the records you wish to keep. In *Softwood File*, you do this through a requester window where you enter the title for a field (e.g., Address) and then click on a box that describes the type of information in that field. The choices here are text, phone, date, amount, etc. Obviously, it is possible to set up a file where every field is text and thus capable of holding anything you put into it, and in some cases this may be desirable.

Usually, however, you'll want to be more specific, for assigning the correct attributes to a field will not only tell your computer how the information should be handled, but will also prevent many entry errors: if a field is tagged as a date field, it will accept only information entered in a date format; and an amount field will not accept text.

As you create your fields, they appear vertically in a smaller window that shows both the assigned title, the characteristics and the length of the field. Once you've created your form and told *Softwood File* to accept it, these fields appear in a horizontal arrangement, looking like headers on ruled chart paper.



Softwood File IISG gives you the ability to store not only written information, but sound and graphics as well.

In all versions of *Softwood File*, the two file-viewing features have been both simple and useable. Perhaps realizing that lists are among the easiest ways of finding and comparing information, *Softwood File* in its default mode shows all database records in a horizontal format that is divided into labeled field columns. With a typical address file as an example, your eyes scan the labels until you find "Last Name," then scan down until you find "Smith" nestled between "Slick" and "Spike"—assuming, of course, that your file is sorted alphabetically according to surname.

Should that record need changing, click on the first field in the record. You'll be flipped to a "form view" screen where only that one record is presented, each field in a highlighted box that may be edited or rearranged as you wish. Editing is rather straightforward: click on the appropriate box and type over the old information. Rearranging is also done with the mouse, by clicking and dragging the boxes until you have them arranged as you wish. Note that this rearranging affects only the printing of a record: there may be times, as in the printing of address labels, where you wish to print only a portion of what is in the record; at other times, you may wish to change the arrangement of fields for a more coherent printout.

In similar fashion, the columns of information on the "list" screen can be rearranged as to width and/or placement by selecting and dragging with the mouse pointer.

There are special functions fields in *Softwood*, such as "Calc" fields that obtain information from amount fields. Assume you keep track of money you've loaned to friends: one column is for "Amount Owed," a second for "Amount Paid," and a calc column is entitled "Balance." Setting up your equation is easy: Amount Owed – Amount Paid is typed in the calculation requester and the rest is automatic. The program will not conduct math vertically on screen, however you can add columns (e.g., Total Owed) on a printout.

Other special columns work as their names imply: define a field as either "Picture" or "Sound" and when entering information into that column specify the path as well as the IFF sound or graphic field you wish to see, as in "DF1: Birds/Sparrow". To recall these items, click on the item name you wish to see or hear. In a variance, there is a feature called "Slideshow" on the pull-down options menu and each picture in your file will be displayed.

"Phone" is another special field. Find the record for John Smith, or whomever you wish to call, click on the Phone entry while holding your telephone receiver close to your monitor's speaker, and *Softwood File IISG* will generate the proper tones for dialing. Obviously, this last will be used only by those who are incredibly lazy and those who wish to make use of every feature of the program.

The documentation included with *Softwood File IISG* is good, though short. At times, brevity is a blessing, but I would have appreciated an index to make it easier to find answers to specific feature-related questions. A further criticism is that the manual is for *Softwood File II* (though it does come with an SG sticker in place). All the SG features are documented only on an errata sheet stuck inside the front cover. While I realize the cost of revising manuals is high, I still feel a quality product should be dressed with quality.

Though the lack of math functions and the lack of sophisticated sorting procedures will prevent *Softwood File IISG* from being seriously considered for business use, it is still a worthwhile program for the home or the small office and should make itself useful in many ways. With its ease of operation, it is also an ideal introduction to the sometimes hazy world of database management. ■

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Reviewed by Gary V. Fields

Spellbound

Computer: Amiga
Publisher: Learners Image
P.O. Box 3669
Logan, UT 84321
Price: $39.95
Ages: 5–15 years

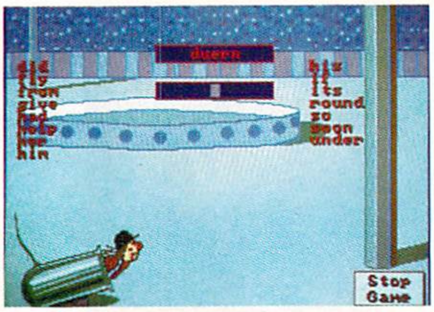
Spellbound is a friendly computerized teacher which lets young children learn and test their knowledge of words in three separate games. Using colorful graphics, some animation, mild humor and a mixture of digitized and synthesized voices, the game assumes the role of a patient teacher. But what really makes *Spellbound* such an excellent learning tool is that it effectively creates a pleasant learning environment for the student.

Before I describe the three games, let's look at how you decide which list of words the child will study. The game comes with a healthy word list, but to get full advantage of its teaching potential you'll want to add more. This is done by selecting "Make A New Spelling List" from the main menu. Once selected, the parent or teacher can load and edit an existing word list or input an entirely new list. This ability makes it possible to add a child's current weekly spelling lesson to the program disk. And because the game is not copy protected and can be duplicated, there is no need to worry that a careless child might destroy (or lose) this educational investment. For that same reason, the game can even be installed on a hard disk if you wish.

The three games are simple but effective. "Match-It" presents a screen with a barking dog and a hoop of fire. A pleasant-sounding, digitized, male voice asks the child to point at the word spoken by the Amiga's synthesized voice. To respond, the child simply points at one of the three spellings offered and clicks the mouse.

In the second game a clown tucked tightly away in a cannon appears, and the child is told to unscramble some letters to spell a word. The list of correctly-spelled words from the current lesson is displayed on both sides of the screen to help the child. Again, to respond the child must type the correctly-spelled word.

In the last game, "Spell-It," a clown holding a fist full of inflated balloons appears. Again a message (using mixed digitized and synthesized voices) asks the child to spell a word. To respond, the child



Using colorful graphics and digitized and synthesized voices, the game assumes the role of a patient teacher.

must use the keyboard to input the correctly-spelled word.

Each game cycles through the entire spelling list (normally ten words). If the child misses the same word twice, a most congenial voice will help the child by speaking the correct word. I was happy to find the voices displayed only one emotional quality—caring. Thus there is no need for any child to dread the pleasant teacher employed by *Spellbound*. The rewards (all child-pleasers) come when the child completes an assignment without making a single mistake—the dog jumps through the hoop, the clown flies away or in the case of the cannon is (with gentle, harmless humor) blown away.

I normally avoid using the adjective "friendly" to describe software; because the word was so abused by many developers in the early '80's, the phrase "user-friendly" lost all credence. But this program is truly friendly—in the most meaningful definition of the word. First the program is easy to use. To begin, the child simply points to one of four options (Spell-It, Mix-It, Match-It or Make A New Spelling List), clicks the mouse, and presto he or she is ready to go. But beyond that, the program succeeds in making the child feel comfortable. I would even venture to describe the program as "loving," or at least that is the impression it creates. This loving illusion is accomplished with a digitized voice which talks to the user with a true human voice filled with caring inflection.

I have only two complaints about the program. Complaint 1: Unlike a real teacher, *Spellbound*'s instructor cannot tell the difference between the words *you* and the word *ewe*. When the child is asked to spell a word, no definition is given, just the request for the child to spell the word spoken by the computer's synthesized voice. If the program is expecting (because of the selected word list) the child to spell *ewe* and he responds with *you*, he will be told that the word is wrong, even though the word he wrote might have matched the word he heard exactly. A human teacher in the same situation would probably have targeted which word the child was to spell with a sentence using the word like: "Spell *ewe*, as in a female sheep is called a 'ewe.' " In the program's defense, if the child is working on a weekly spelling list, he should know which word—*ewe* or *you*—he is studying.

Complaint 2: Because the voice used to speak the words from the spelling list is synthesized (instead of digitized), it is sometimes difficult to understand which word it said. To help remedy this problem, the game screen includes an icon which when clicked will repeat the word as many times as the child wishes. But after enjoying the clear, exact, understandable digitized voice of the teacher, the less understandable synthesized voice of the computer is a disappointment. Of course, if the spell list were not spoken with the Amiga's built-in voice, there would be no easy, affordable way for a parent or teacher to add to the spell list. To minimize the recognition problem, the "Make A New Spelling List" includes a translator which lets you adjust the way the computer sounds vowels and consonants. With this option, you can get close, if not exactly sounded words to match those in the spelling list—but never as good as a real human's voice.

If anything these two complaints underscore why the computer, even one as good as the Amiga, will never replace human teachers. As it stands, *Spellbound* is an excellent teaching aid which does what it was designed to do and does it very well. If you have young children in your home and would like to put your Amiga to work as a teacher, *Spellbound* is a wonderful product which does just that. I recommend this one. And remember, that recommendation comes from a parent who has tried and been disappointed with dozens of "educational" software programs which preceded this one. *Spellbound* delivers what it promises—it helps children learn. I just wish it had been around when I was young; if it had been perhaps I wouldn't have to turn to my word processor's spell checker so often.


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"NYUK, NYUK."
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Producers ROBERT & PHYLLIS JACOB
MASTER DESIGNER SOFTWARE presents
THE THREE STOOGES
Actual Amiga Screens

Reviewed by Gary V. Fields

WordPlex

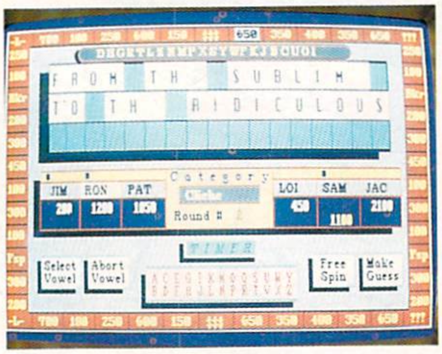
Computer: Amiga
Publisher: PAR Software, Inc.
P.O. Box 1309
Vancouver, Washington 98666
Price: $39.95
$24.95 (three optional data disks)

Millions of TV viewers love game shows, and a good percentage of that audience thinks the best show to ever give away money is *Wheel Of Fortune.* Hoping to benefit from that game's popularity, *WordPlex* brings the same word challenge and big bucks giveaways to the Amiga.

As those who have viewed *Wheel Of Fortune* (and who hasn't?) would expect, *WordPlex* spins around the same "hangman" premise. A window divided into three rows of blank boxes appears. Next you are told those blanks represent words in a specific category such as phrase, cliche, quotation, place, etc. In turn, each contestant (one to six can play) spins a wheel and guesses a letter. If any of the words in the category contain the guessed letter, the contestant collects some money, the letters are inserted on the board, and the player spins again. This continues until someone figures out the mystery words. The contestant who collects the most money is the winner. Winning requires a good degree of luck, a good knowledge of both important and trivial facts and the ability to spell.

I have always liked games which let more than one person get involved, rather than simply pitting human against computer. If nothing else, *WordPlex* delivers human competition. Up to six players can test their gray matter here. In fact the computer acts simply as a host (not competitor) even if only one player is chosen. Thus, the one-player mode serves as a practice area only, since you can neither win nor lose against yourself.

Like the TV game this one was fashioned after, spinning is important. Depending upon where your pointer stops, your guess could earn you as much as $1400 or if you are unlucky, rob you of all you've won. The computer keeps track of whose turn it is, how much money each player has and any free spin cards collected. In the long run the winner at *WordPlex* will be the person who is better at deciphering puzzles rather than the one who is lucky at spinning. But as is true of the real game, a few good (large amount or free spin) or bad (bankrupt or lose spin) spins can have a dramatic outcome on how much money you have when you walk away.



Winning requires a good degree of luck, a good knowledge of both important and trivial facts and the ability to spell.

To tell you I am a game show fan would be a lie. It would have to be a pretty boring day for me to spin my TV dial looking for one of those half-hour killers. But I must admit, I have been drawn into the challenge of trying to decipher more than one of those puzzles by accident—by being on the wrong channel at the wrong time. What it all comes down to is that humans are just naturally curious and competitive. When we are challenged, we respond—and that is exactly why some players will find *WordPlex* addictive.

WordPlex has a magnetic quality which can draw you into the game even if you want to resist. All of us have become involved with games which had us muttering to ourselves, "I'm going to play one more round and then leave." You'll find yourself doing the same after a spin or two here as well.

The game's graphics are nothing to get excited about, consisting mostly of flashing boxes which hold information. As you would expect, you can play the entire game using your mouse alone, except for when you try to solve the puzzle. At that point you must type your guess into a requester window.

I think most Amiga users will complain that the game has too few "bells and whistles." I had hoped to find an animated game host or perhaps a full-featured hostess to turn boxes, but none were found. A synthesized voice does tell you about the games and announces the winner and the correct answer to the puzzle. But unlike the game *Wheel Of Fortune,* there is no studio filled with prizes displayed, no women in tight dresses or humor from a large-toothed host.

Without the "bells and whistles" what remains is a well-done (if not visually exciting) word game which puzzle solvers, word twisters and trivia whizzes will love. Actually the current version of *WordPlex* is the second release of the same game for the Amiga. The screen display in this update is crisper, the letters larger, and the spinning wheel takes up the entire screen instead of only a corner. The box which keeps track of guessed letters has also been moved to just above the puzzle window, so it is easy to keep track of guessed letters. The two buy vowel icons now spell out the option (Select or Abort Vowel) instead of just showing a single letter, and you can play up to 18 rounds instead of only three. The game disk is not copy protected (you can easily install it on your hard drive), but the update game does employ a "keyword protection" scheme (the original did not) which requires you look up and type a word from the manual each time you begin.

The game categories included on the program disk are: person, place, title, thing, quotation, people, cliche and phrase. For those who just can't get enough of *WordPlex,* the company also sells a set of data disks with thousands of other puzzles in categories like: America, nature or the Bible. The program is also totally customizable. You can type in your own phrases and name your own categories in the latest version.

Whether you will enjoy *WordPlex* or not all comes down to one question: "Do you enjoy word games?" If you do, you'll love this one. On the other hand, if you are looking for fast action or dazzling graphics and sound effects, you will not find them here. I would much rather play this game than watch any game show on TV because here the challenge is real and commercials are extinct.

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Victory Road for the IBM, Commodore and Apple II computers. And *Guerrilla War,* for the IBM and Commodore computers. Addictive action with great graphics. Hey, it's a jungle out there. And now we've brought it home.

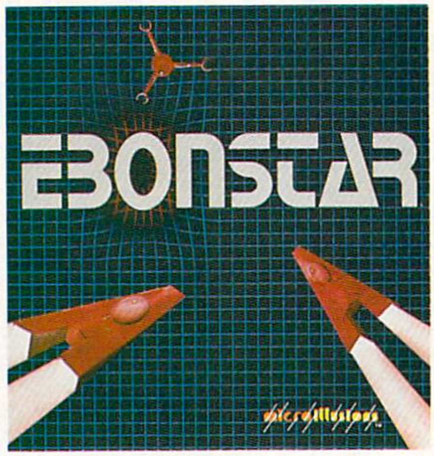
DATA EAST

DATA EAST USA, INC. 470 Needles Drive, San Jose, CA 95112 (408) 286-7074

Reviewed by Graham Kinsey

Ebonstar

Computer: Amiga
Publisher: MicroIllusions
17408 Chatsworth St.
Granada Hills, CA 91344
Price: $39.95



As you progress into the later rounds, Arch will generate superior computer opponents that are more than a match for you.

As the popularity of the Amiga 500 increased, many small companies started to produce Amiga arcade games. Recently some of the larger, more established software companies have introduced more arcade games, both original and not-so-original. MicroIllusions is one of the larger software companies to enter the competitive Amiga arcade market with their space combat game *Ebonstar.*

Ebonstar takes place in the year 3000 A.D., when virtually all medical, political and social problems have been solved. The people of this age are waited on hand and foot by machines that attend to their every desire. With no other challenges facing them, these people have designed a deadly sport in which contestants in single-seat spaceships battle around the edges of a synthetic black hole named Ebonstar in a contest to the death.

Upon booting the game and selecting certain options you are presented with a view of the Ebonstar sector, represented as a grid with elastic boundaries where the entire battle is contained. When the game starts, the Ebonstar will be created in the sector by the referee ship called Arch. Arch not only maintains the Ebonstar at all times, but it also creates all computer opponents (with one exception) and most other objects that appear in the game.

At the beginning of the game your ship will appear in a corner of the screen. You have an unlimited supply of energy bolts that when fired repel almost anything they strike but do not directly destroy any object. You must use this weapon to drive all opponents into the crushing gravitational field of the Ebonstar while avoiding the Ebonstar yourself. You can also use this weapon to attempt to destroy the Ebonstar.

After a short interval Arch will project a maintenance beam into the Ebonstar to stabilize the synthetic black hole. If you can fire one of your energy bolts into this beam, you can cause the Ebonstar to destabilize and explode. Unfortunately, to do this your shot must enter exactly parallel to the beam, otherwise Arch will deflect your energy bolt away from the energy beam. Destroying the Ebonstar is the only way to advance to a higher level where the danger (and point rewards) increase.

Arch will generate computer-controlled ships that are similar to your own ship in abilities. These computer opponents are your most persistent enemies, although in the early levels they can be handled without much difficulty. As you progress into the later rounds, however, Arch will generate superior computer opponents that are more than a match for you. Arch allows three computer opponents to exist at one time, which in itself provides plenty of challenge.

But there is another opponent that even Arch is powerless to control. Nemesis is an alien starship from another world that periodically enters this universe via a stable Ebonstar. It relentlessly hunts down any human opponent, firing destructive fireballs and/or explosively colliding with any human-controlled ship.

To add to the pressure you can also simultaneously battle up to three other human opponents at one time. You might wonder how four people can play a game on a computer that has only two game ports. The answer is that *Ebonstar* supports ship controls via certain keys on the keyboard in addition to the normal mouse and joystick controls. Four people can actually play at once using the Amiga keyboard and two joysticks.

In addition to all the opponents, there are also many objects that Arch generates. Some objects when caught by a player grant special abilities to that player's ship. The captive Gyron grants a player one destructive fireball (just like the one Nemesis fires), while catching a Pulsar grants a set of energy bolts that have a computer guidance system built in. There is also a powerful object called Spark that when caught allows a player to instantly eliminate any and all opponents within a certain range.

Other objects that Arch produces hinder you. Quarks and MagnePods will bump you around. Quarks will always push you closer to the Ebonstar while MagnePods only harass a certain player. The nasty TeslaSpheres can remotely disable your ship's energy bolts or engines. If all these obstacles are too much for you and your friends, there is a special play mode called Tournament mode that you might want to try. In Tournament mode Arch will not create any computer-controlled ships. Arch is also much more generous with the beneficial Gyrons, Pulsars and Sparks, distributing these even on the first level.

The quality of the graphics in *Ebonstar* is not worth writing home about. It's not that the graphics are *bad,* but rather they are used sparingly. The sound effects are pretty good, especially those that accompany the moving and the explosion of the Ebonstar itself. The game is copy protected, however at least the protection scheme doesn't seem to cause undue wear and tear on your disk drives.

The only problem is that it's really not very exciting in one-player mode. You can become bored fairly easily, since one player doesn't stand much of a chance against the horde of enemies the game throws at you. The Tournament is not available in one-player mode. Only when you have three or four players (especially in Tournament mode) does the game become enjoyable and not too difficult. If you have a couple of friends to play *Ebonstar* with, it can really be a blast, but unless you are expecting an extremely difficult challenge, you probably will come to the conclusion that *Ebonstar* isn't fun unless you aren't alone. ■

by Howard Millman

The "Power On" Report

Educational software that sustains a child's interest while teaching fundamental building-block concepts can be hard to find. We'll look at programs that do just that.

"Technology plays a central role in our lives, in our homes, . . . and in our schools. However, the potential and value of technology in our schools has not been fully realized." So asserts Rep. James M. Jeffords (R-VT, Committee on Education and Labor), commenting in the recently-released Office of Technology Assessment's 250-page report: "Power On! New Tools for Teaching and Learning."

The report's authors agree with Representative Jeffords. "Power On!," assessing the 10,000 educational software products presently available, concludes, "Their quality could be much better."

We agree. Looking at our software-lined shelves, we've previewed well over 100 software programs. To date we've recommended fewer than 12 as innovative, effective and useful.

As did "Power On!," we find that most software conforms to a conservative standard, one that's likely to be widely accepted (and purchased) by teachers and parents. Why? Primarily because the software mirrors the familiar textbooks they're accustomed to, except now text is on screen instead of in print.

This column uncovers programs that often break with that tradition. As Rep. Jeffords also said, " . . . it is most appropriate to . . . encourage effective use of technology in our schools so that our children can be more independent, competitive and productive tomorrow." We share that view. We believe the way to encourage first-rate software is to confer recognition on publishers of innovative educational programs.

Translating Promise into Practice

"Power On!" discloses, "U.S. public schools now average one computer for every 30 students with average access of one hour per week." For the 46,000,000 children in elementary and high schools nationwide, this resource rationing dictates that keyboard time must be used wisely. Carried down to the bottom line, software of quality isn't merely important, it's *essential.*

Today's students deserve comprehensive courseware of exceptional quality. The first step of this long journey starts with parents and educators translating the computer's promise into practice. How? By recognizing that well-travelled paths lead only to yesterday's triumphs.

Now, on to this month's selections.



Sky Travel

Sky Travel

Computer: Commodore 64
Ages: 10 to Adult
Publisher: MicroIllusions
17408 Chatsworth Street
Granada Hills, CA 91344
(800) 522-2041
Price: $49.95
Emphasis: Astronomical science, history and mythology

The gaze of star watchers sweep the night sky, probing the infinity of space, their innate curiosity prompting them to wonder "What's that star's name? Is that bright object Mars?" Maybe they wonder if Captain Kirk and Mr. Spock are accurate when they yak about galaxies and star clusters?

Sky Travel is a graphic-oriented database for astronomy students or the more-than-mildly-curious star watcher. It's a versatile alternative to a star identification wheel chart. Star charts are limited, so they cannot correct for latitude and longitude, time/day/date, as well as compass directions. A more dynamic solution was required, that answer is *Sky Travel.*

MicroIllusions' *Sky Travel* transforms the venerable circular chart into a dynamic soliloquy on the sky.

Although easy to use, *Sky Travel* is complex because it's complete. Anyone, any time, anywhere on earth can get an accurate fix on stellar objects. "Any time" in this case is a 20,000-year spread, a significant chunk to us mortals but merely a hiccup in the life of the universe.

The first step is to configure the program by entering the user's latitude and longitude, if known. For the 99.99% of the earth's population who haven't yet memorized their coordinates, an appendix lists 100 or so of the world's major cities as well as numerous major islands. What if none of the cities are close enough and the user doesn't inhabit one of two dozen islands listed? Then, by centering the cursor crosshairs on a Mercator-style world map, the program computes the latitude and longitude. Either the keyboard or a joystick mobilizes the cursor.

Once that's computed, the user enters the time and date. Then the gears grind, after a few moments the screen displays a view depicting the astral objects residing in the southern sky. The objects are drawn from *Sky Travel*'s database of 88 constellations, 1200 stars and 300 sky objects.

Entering compass directions (N, E, W) changes the perspective accordingly. Raising or lowering the cursor changes the elevation of the view in relation to the horizon. *Sky Travel* also displays the sky below the horizon even though it is out of sight of the viewer. This feature alone is somewhat of a "gee whizzer," but the best is yet to come.

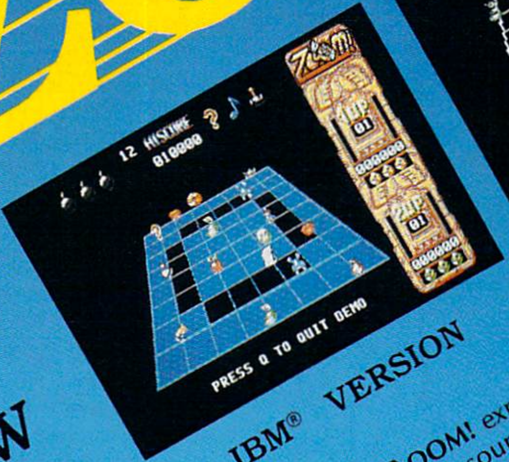
By centering the cursor over an object and pressing F7 (or fire button on the joystick), information on any of the objects scrolls across the screen's bottom. The data list the object's Draper (or New) Catalog number along with the Messier number. The text often capsulizes significant astronomical data about the object, including distance (in light years or minutes), mass, spectral color and other facts.

Sky Travel offers four modes: Map (for computing the latitude and longitude), Set (for entering day/date/time), Chart (always depicts North as "up" and no horizon) and finally, Sky. The Sky mode is the most versatile; it allows custom tailoring of the screen to display or exclude certain objects as well as narrowing the width (down to nine degrees from the default of 72 degrees) for increased clarity.

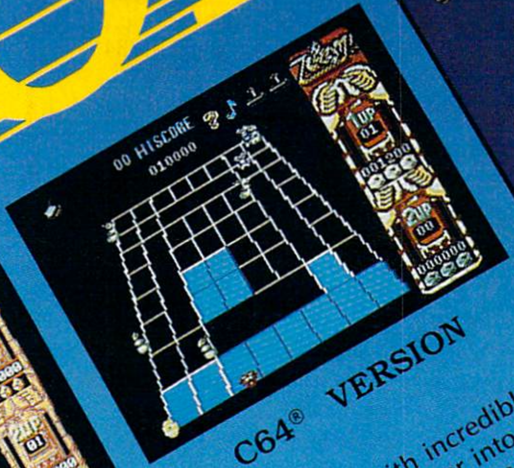
Continued on page 46

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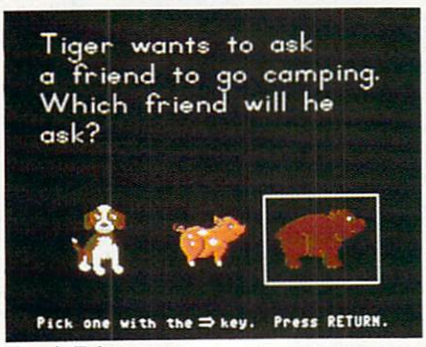
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Continued from page 44

One major difference between Sky and Chart is that Chart depicts astral objects as dark spots on a light background. So, when calling for a hard copy, the printer doesn't beat itself to death. SHIFT/P invokes a (screen dump) printout of any Chart view.

The program's other options include a choice of whether constellations should bear three-letter abbreviations or no names, if planets are referred to by their symbols and to display or ignore deep sky objects such as distant galaxies and nebula. When Tracking is toggled on, the screen follows a moving object's trajectory and records its path using Right Ascension and Declination measurements.

Sound, another option, is simply a perq that adds a bit of pizzazz if the night is otherwise too silent. It synchronizes the sound of an accelerating jet plane with the movement of the crosshairs. When sound



Tiger's Tales

is selected the crosshairs transform into a jet plane or spaceship. This is fun, however, it makes centering on an object for identification a bit more difficult.

The F5 key "Finds" any planet, constellation, star or comet and predominantly displays it in the screen's center. It's a shortcut for searching through the Sky mode to locate the object. Tracking can be used only with the Find command.

For following objects in real or exaggerated time the program's internal clock rate can be set from 0 (stationary) to 1× (actual time) up to 64× for accelerating elapsed time and the object's velocity. The screen display shifts in accordance with the clock rate.

Sky Travel allows the date to be set forward or back 10,000 years (the obvious assumption is that the galaxy abides even if the earth does not).

The program's 61-page manual includes 12 tolerable pages of instructions—actually short tutorials. The balance consists of expanded examples, intriguing historical trivia, a glossary and technical tables.

MicroIllusions also markets a version of *Sky Travel* for the Amiga, entitled *Planetarium* ($69.95). The Amiga version contains a larger star database and, of course, optimized graphics.

Tiger's Tales

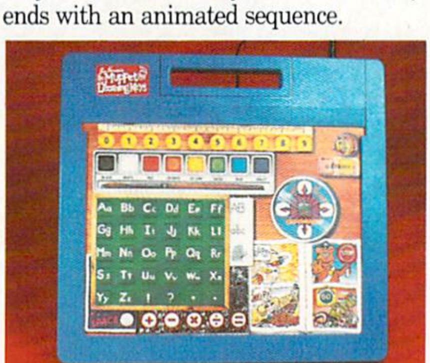
Computer:	Commodore 64
Ages:	10 to Adult
Publisher:	Sunburst Communications 39 Washington Avenue Pleasantville, NY 10570 (800) 247-1934
Price:	$65.00 $195.00 (Lab Pack 10)
Emphasis:	Vocabulary Comprehension, Image/Word Association

When I was a kid, (quite some time ago) elective reading rated somewhere between visiting the dentist and behaving in a civilized manner.

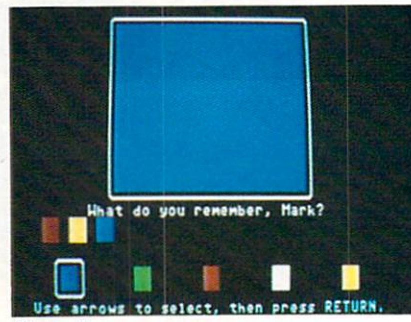
For good reason. Because they were static, those "See Jane Run" readers generated as much exhilaration as a stop sign. Jane (an early jogging enthusiast) forever ran and dormant Dick always walked. Granted, most six-year-olds don't need much drama in their lives, but a bit of enchantment in their literature would be welcome.

That was then and this is now. Reflecting the change in times and technology, children's readers have taken a quantum leap into the future. Representative of this genre (yet a cut above) is Sunburst's *Tiger's Tales*, an interactive reading program featuring bright graphics and some animation spiced with a modicum of mystery.

Tiger's Tales consist of five stories, ranging in length from five to 13 pages (screens) about Tiger the kitten's adventures. Since the stories are interactive, they have more than one conclusion or storyline. Although Tiger is the subject in all five stories, the tales are not serial, they can be read in any order. Each story ends with an animated sequence.



Muppet Learning Keyboard



Simon Says

On each page the student is typically offered three choices; the storyline branches depending on the student's decision. Not every choice leads to a continuation of the story, some result in a logical dead end, so further decision-making is required. Keyboard activity is limited to pressing RETURN and controlling the cursor keys.

As with all Sunburst educational software, reproducible worksheets are included to supplement retention by visually reinforcing the word/image relationship.

To insure vocabulary comprehension, students may choose between reviewing the words or reading the story. The words section consists of associating ten or so key words with a related picture. All key words are either one- or two-syllable nouns and subsequently appear in the story.

Geared to early readers (1.3 to 1.5 Spache), the computer keyboard may intimidate or confuse some students. *Tiger's Tales* is also compatible with the graphic-oriented Muppet Learning Keyboard. The Muppet keyboard has been around for a while, and it's still worthwhile (I hope that description applies to me as well). The brightly colored keyboard, while less intimidating, still offers all of the Commodore 64's functions.

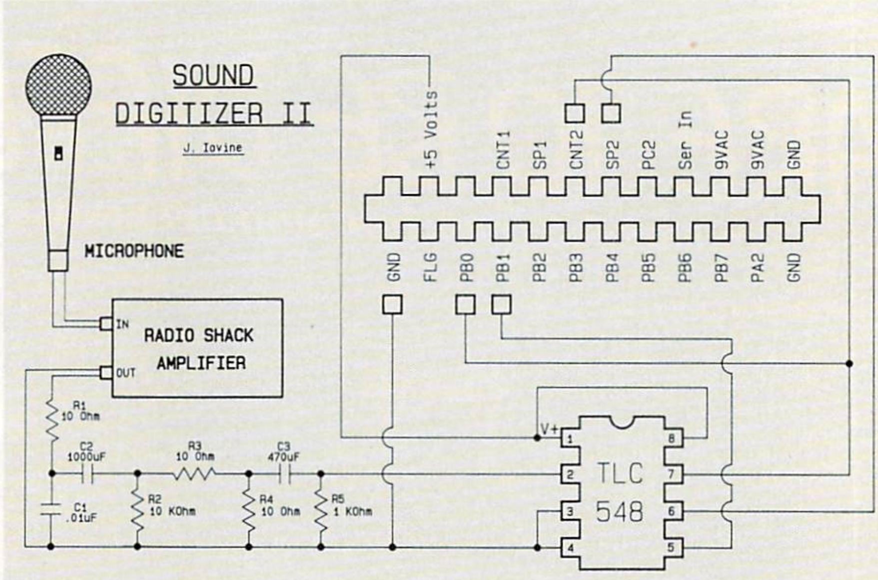
The Muppet keyboard ($99.00), unfortunately, is not widely supported by other publishers. Sunburst, however, markets several programs that are compatible. Two others that deserve a closer look are *Simon Says* and *Teddy and Iggy,* both are memory-improvement programs.

Featuring as its main characters an inchworm and a teddy bear, *Teddy and Iggy* ($65.00) employs geometric shapes, colors and sequence to reinforce memory and recall. *Simon Says* ($65.00), geared to younger children, uses colors, numbers or letters in recurring sequence.

We, of course, do not know how the authors of "Power On!" feel about *Sky Travel* and *Tiger's Tales.* We believe both programs would readily conform to their criteria for being innovative, affordable and useful.

by John Iovine

Sound Digitizer II



STEPHEN KOZACHYN

Here is the program listing for the Commodore 64 version of Sound Digitizer II (described in last month's *Commodore Magazine.*) In the time between this issue and the last, I incorporated two audio filters into the circuit design to improve the overall fidelity of the unit. (See schematic.) The filters are comprised of two resistors and two capacitors.

Anti-Aliasing Filter

The first filter coming in from the amplifier is a low-pass filter (R1 & C1). As its name implies, this filter will pass low sound frequencies and block high frequencies. The purpose of this filter is to suppress sound signals whose frequencies are higher than half our sampling rate. The reason for this is that these signals will distort our sound sample. This phenomenon is know as "aliasing."

High-Pass Filter

The second filter is a high-pass filter (R2 & C2); it passes high frequencies and blocks lower frequencies. This helps make the plosive sounds such as P, T and K more understandable.

Together these filters complement each other and result in a band pass filter.

Program Operation

The program is similar to the program for the Commodore 128. The differences are as follows:

- The save and load routines do not add the "SND." prefix to the file name, and it has just one speed.
- The "R" key will still put the sample into a repeating loop during playback, but the time required for the computer to see the key pressed appears longer.
- The 64 also appears to be more sensitive to volume control on the amp. This may require some adjustment to get good samples.

Before typing this program, read "How to Enter Programs" and "How to Use the Magazine Entry Program." The BASIC programs in this magazine are available on disk from Loadstar, P.O. Box 30008, Shreveport, LA 71130-0007, 1-800-831-2694.

Sound Digitizer II—64

```
2 REM ***** 64 DIGITAL RECORDER
  ******'BDBH
4 POKE 56579,255:POKE 253,0
  :POKE 254,22:POKE 5120,0
  :POKE 5121,16'FMIM
6 PRINT TAB(7)"[CLEAR,DOWN7]MAIN MENU
  :"'CCYJ
8 PRINT:PRINT TAB(7) "DIGITAL
  RECORDER AND PLAYER"'DDSP
10 PRINT:PRINT"1) LOAD ML ROUTINE
   [SPACE2]7) DIRECTORY"'CBWG
12 PRINT"2) RECORD[SPACE11]
   8) QUIT"'BAFF
14 PRINT"3) PLAYBACK "'BAIE
16 PRINT"4) LOAD SOUND SAMPLE"'BAJI
18 PRINT"5) SAVE SOUND SAMPLE"'BAAK
20 PRINT"6) CHANGE PITCH"'BAXC
22 PRINT:PRINT TAB(2)"ENTER NUMBER
   1-8[SPACE2]THEN PRESS RETURN"
   :INPUT J'EFAM
24 ON J GOTO 68,26,28,34,38,46,58,
   32'CYEH
26 PRINT"[CLEAR]":PRINT TAB(12)"[DOWN]
   RECORDING":SYS 4864:GOTO 6'FLPM
28 PRINT"[CLEAR]":PRINT TAB(12)"[DOWN]
   PLAYBACK":SYS 4941:PRINT"[CLEAR,
   DOWN3]RETURNING TO MENU"'FKIT
30 FOR T=1 TO 150:NEXT:POKE 197,64
   :POKE 198,0:GOTO 6'HVAH
32 PRINT"[CLEAR]":END'CBFC
34 PRINT"ENTER NAME OF SOUND SAMPLE :"
   :INPUT A$'CDTM
36 PRINT"[CLEAR,DOWN4]LOADING.."A$
   :LOAD A$,8,1:GOTO 6'DLLM
38 PRINT"[CLEAR,DOWN2]ENTER NAME OF
   SOUND SAMPLE"'BAYP
40 INPUT B$ :PRINT"[CLEAR,DOWN]
   SAVING SAMPLE ";B$'CGRG
42 SYS 57812B$,8:POKE 173,22
   :POKE 172,0:POKE 780,172'EFDK
44 POKE 782,148:POKE 781,0:SYS 65496
   :GOTO 6'EVWK
46 PRINT"[CLEAR,DOWN4]DEFAULT SETTING
   IS 38":G=PEEK(5019)'DIIQ
48 PRINT:PRINT"CURRENT SETTING IS ";
   G'CDIP
50 PRINT:PRINT:PRINT"A SMALLER NUMBER
   WILL INCREASE PITCH"'DCSN
52 PRINT"A LARGER NUMBER WILL
   DECREASE PITCH"'BAKN
54 PRINT:PRINT:INPUT"ENTER A NUMBER";
   A'DEWL
56 POKE 5019,A:POKE 5154,A:POKE 5160,A
   :GOTO 6'EWBN
```

Continued on page 111



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SULTAN
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by Robert W. Baker

Downloading Help



LINDA CLARK

Explore the inner workings of the Q-Link telecommunications service with network pro Bob Baker.

A few issues back there was a discussion about downloading problems and potential causes or cures. Well, Q-Link has added a special section in the Software Libraries of CIN to help newcomers and those who may not feel too comfortable about downloading program files. There are actually two areas of interest—the Downloader's Starter Kit and the Downloading Help Desk. There's a wealth of information for new users in the Downloading Help Desk along with a Downloading Help Message Board where you can ask questions about downloading. Q-Link has assigned a staff member to manage this area on a full-time basis, so you should get a response to your message in a reasonable amount of time.

Besides the message board and an overview of the area, you'll also find a list of common questions and answers, plus a list of hints and tips for downloading. If the world of telecommunications is new to you, this is the best place to start. You'll find information on the various types of software available, with comments on copyrighted programs, Shareware and public domain software.

Concerning the downloading operation itself, there's information on problems like being disconnected from the system, having your computer lock up, or getting disk error messages in the middle of a download. As mentioned in the September column, Q-Link will issue credits for incomplete downloads under certain circumstances. Download credits are normally issued for disconnects, lock-ups and similar downloading problems, but check the information provided in the Downloading Help Desk for more details. Since you'll need to know the complete filename and uploader's ID to get credit for the file you were trying to download, be sure to scribble it down somewhere before you start.

Most lock-up conditions usually relate to a minor problem with the TymNet network. If you use TymNet and start to experience this problem occasionally, there's a patch available for the Q-Link software to help overcome lock-ups.

Under the Q-Link Utilities in the Software Libraries you'll find a download patch program. It can also be downloaded directly, with a filename of "updateq" uploaded by "QLink" to the library. The Q-Link Update Program was designed to help correct problems some people experience when downloading long programs via the TymNet system. The file comments contain complete installation instructions that are pretty simple. All you have to do is load and run the update program and insert your Q-Link disk when requested. It only takes a few seconds for the program to be updated.

Another update program is available for those with Q-Link disks without a version number on them. This program will activate the screen name function on your Q-Link program disk, so you can create different names to use on Q-Link. You should find the "screen names" file uploaded by "QLink" in the same library where the updateq utility can be found.

You only need to download and run this program once, as indicated in the program comments in the software library. The installation instructions are basically the same as for the update utility: you simply load and run the utility, then insert the Q-Link program disk when requested. After this feature is added to your program disk, you'll have to log back on to Q-Link and go to the Customer Service Center to add new screen names. There's a Create a Screen Name function under the Screen Names and Profiles area. Just follow the prompts to add up to four additional screen names to your disk. You're limited to a maximum of five active names, but you can delete and add names at any time within that limit. Just keep in mind that once a name is deleted it cannot be reclaimed.

If you've added screen names to your Q-Link Program disk, you'll receive a prompt to select the desired screen name whenever you log on to Q-Link. Your original screen name will be the default at the top of the list, with the added names listed following that entry. To use a different name, simply use the cursor key indicate the desired name and press F1 or RETURN.

Keep in mind that you cannot change your selected name while online. You have to log off and then log back on again to change your active screen name. However, having multiple screen names can be a great advantage in spite of the inconvenience involved in changing from using one or another.

The most obvious use of multiple screen names is to create a separate name for each member of your family, all under the one account. This way, you'll get only one bill each month from Q-Link with all your online charges combined. Another handy trick is to create added names for online notes to yourself via E-Mail. Or you may want to use different names for various groups and clubs when you're online.

Getting back to the topic of downloading, don't forget that you can save a lot of time by directly downloading a file if you know the full filename and the uploader's id. You do not have access the comments associated with the file when you download directly. However, you can order a printed directory of the available public domain libraries with a description for each file. Combined with the direct downloading feature, this can be a great time saver. You'll find information on ordering a copy of the latest directory in the Downloading Help Desk.

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by Shay Addams

Staying Alive: How to Solve Role-Playing Games

News and opinion from a leading explorer of those fantasy realms called adventure games.



DENISE FALESKI VITOLLO

The main problem facing the role-player is survival—what good does it do to solve a puzzle if half your party is dead by the time you figure it out? Or to finally get your sticky little adventuring hands on the Orb of OhBoyIGotIt! if the rest of the team gets wiped out by a lone orc while carting it back to the Guild?

So before setting out to rescue those hopeless folk who inhabit Britannia, Skara Brae or some other fantasy world (and what *would* these people do without you to save them from every Evil Wizard who happens along, anyway?), some pre-quest preparation is in order. First, devote some time to studying the manual. This is much more vital than when playing a text or graphic adventure—the fact that the documentation for RPGs is usually 10-20 pages long and sometimes includes as many as three manuals is the first clue to their importance.

If it's a multiple-character game, study the possible races and classes and their strengths and weaknesses. On paper, draw up a well-balanced crew that can access as many of the various skills required for success. (Of course, you won't know exactly *which* skills are required, but that's half the fun!) In a game system like *Wizardry* or *Bard's Tale,* which permits characters to change class as they advance, a wise Finder of Lost Orbs will plot these changes out to their ultimate conclusion for each party member, assuring a balanced team throughout. In a good paper-and-pencil RPG, character creation is often a diverting mini-game in itself, so keep that in mind and have some fun before you boot the disk.

The classic team for a six-member party in a game involving magic is a pair of heavily armored Fighter-types up front (Dwarfs are often best), where they can protect the poorly armored Priest-type (to heal wounded members) and Wizard-type (casting combat spells) bringing up the rear. Middle slots may be filled with another Fighter-type (usually only the first three positions can attack with hand weapons), an Archer, a Thief (check the manual for comments on locks and whether you really need thiefly skills) or perhaps a member of a class that can cast spells as well as swing a battle axe.

Science fiction games call for a similarly balanced crew, though their positions are unimportant because they usually engage in ship-to-ship rather than hand-to-hand combat. Your Medic is the Priest, your Gunner the fighter, and so on. Substitute "alien planet" for "dungeon," and the following principles apply equally to SF RPGs.

A Plan of Attack—and Retreat!

Now that you've got a good team, how do you keep them alive long enough to loot a few temples and ransack some orcs' lairs? It helps to think of the overall quest as a series of missions. Before entering the first dungeon or wandering too far from the first town, make a plan. Decide exactly what you want your party to accomplish each time they step outside the shelter of the Inn, Tavern or Guild. Set a clear goal: to map a certain area of the maze or countryside, to scout for gold or food, or to slay enough Drool-Slimes so your Thief can be promoted to the next level.

Then look at the team's Hit Points and decide on a cut-off point that will ring an alarm and send your team back to safety: If your weakest member has fifteen Hit Points, you may want to head for the stairs when they fall to seven. The more daring you are about sticking to your cut-off point, the more excitement you'll derive from the adventure. Also, the more new party members you'll be able to force to create to replace all the ones killed, or all the gold you'll have to spend resurrecting them, because you didn't head back to the Guild in time. (You should also determine a cut-off point for combat in games that permit you to flee.) These two simple rules—choose a goal, then pick a cut-off point and observe it—are the keys to success.

Management skills must also be developed, for the successful role-player of computer games must manage a plethora of resources and responsibilities that would drive most corporate executives right up the wall. You've got hit points, spell points, food, gold, weapons, maps and a fantasy world full of new discoveries to keep track of, so drag out a three-ring binder and plenty of paper.

Keep records on each character so you'll know how many experience points he needs to reach the next level, who's got which item and so on. And don't forget the maps. Instead of graph paper, with those tiny squares, use map sheets like those provided in *Might and Magic*: a grid of dots, which you connect to draw walls—this way you never ask that fatal question, "Is that line a wall I drew, or the line on the graph paper?" (Hordes of monsters usually appear within microseconds after

Continued on page 60



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by Graham Kinsey

Amiga Public Domain

Again this month I don't have any new Fish disks to talk about, however, there are a bunch of programs that I obtained from PeopleLink and local BBS's. This month some of the highlights include a new demo program for PeopleLink's graphical teleconferencing program ACO, a new terminal program and a major update to an established terminal program, plus a new animation display program.

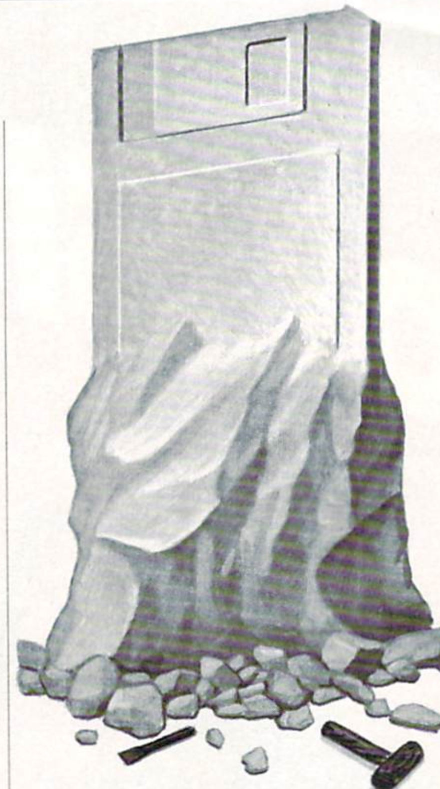
For each program, the author is given when it is known. If I obtained a PD program directly from PeopleLink's AmigaZone, I list the AmigaZone download file number (if no file number is given the program may still be on PeopleLink, but I obtained it somewhere else), so those of you who have access to PeopleLink can quickly download this file. When a public domain program has been classified as shareware, this is also mentioned with the suggested amount.

ACODemo: by Steve Pietrowicz
(AmigaZone file #12878 and 12879)

This is a demo that Steve created (for display at PeopleLink's booth at the Chicago AmiEXPO) to demonstrate the capabilities of ACO version 3.0, the graphical teleconferencing program used on PeopleLink. In addition to the main portion of the demo, which shows off most (but not all) of the major features in ACO, there is an introductory piece in which "Partner" (as in ACOPartner, for those who have used ACO) is introduced in a short skit along with Steve. The entire ACODemo was created with *The Director*. For those who have heard about ACO before, but have never seen it in action (especially if you never saw my review of ACO version 2.0 in the December 1987 installment of this column) and are wondering what all the commotion is about, this is the demo you need to see!

Moria version 2.0: by Bryan Henderson
(AmigaZone file #12781)

This is the first update to the fantastic fantasy role-playing game Moria, (reviewed in the October installment of this column). The most noticeable improvement over the first version of Moria is that color graphics characters have now been added to Moria. Even more importantly, the color graphic characters in



ED SAUK

Moria 2.0 are much better than those found in either Hack or Larn. The other major change is that Moria 2.0 allows you to easily make backup copies of your character. You can now copy the character file via AmigaDOS Copy instead of having to back up the entire disk with the likes of TurboBackup or a commercial disk copier.

Other changes aren't as major, but still worth mentioning. New weapons and monsters have been added. As far as monsters go, the new additions of the Lavender Leprechauns and the Big Blue Icky Things make possession of any money whatsoever much more rewarding, since both monsters are very adept at stealing you blind. The on-screen stats section now displays maximum as well as current attribute values (which makes it much easier to prudently manage your supply of Restore Attribute potions), as well as displaying the current mana and hit point values. The starting equipment for most characters has been improved. Finally, for those who have a habit of putting your character into hopeless situations, there is now a "grovel" command, in which you can beg the "powers that be" to save your character from a deadly predicament. Of course, you will soon find out that even angels don't work for free.

Walk: by Eric Daniels
(AmigaZone file #12981, 12982 and 13061)

This is a stunning *Sculpt/Animate 3D* animation of a chrome pair of legs walking over a checkered floor. Those of you who have at least one megabyte of memory (make that 1.5 MB if you want to hear the digitized sounds) will be amazed by this great example of the results you can achieve by using reflective surfaces in ray-traced animations.

GT: by Greg Cunningham
(AmigaZone file # 12968)

This is version 1.2 of GT, which is a terminal program with some very different features. For instance, GT has no menus whatsoever. Instead, GT has a set of gadgets where the title bar would normally be. To use any of these title-bar gadgets, click on the *right* mouse button. This is sure to surprise (and possibly confuse) many Amiga users at first. GT's protocol list includes WXmodem (for PeopleLink) and Ymodem. There is limited script file support, in that you can attach a set of IF-THEN-type statements (up to twenty per number) to each and every number that you dial to automate the log-on process. It supports autoredialing, including a queue system. GT also supports phone directories, although unfortunately it does not support the AMIC PD TERM phone directory format needed to use Chet Solace's The Final List. Although I can't say I was as excited about GT as many of the folks on PeopleLink, it is a reasonable alternative to the likes of AMIC PD TERM and Communicator and is worth considering.

Access! version 1.4: by Keith Young
(AmigaZone file #13151; Shareware: $25)

This is version 1.4 of Access!, the colorful terminal program I talked about last in the August 1988 "Amiga Public Domain." Version 1.4 holds many improvements. The routine in Access! that allows you to load and read text files has now been removed and has been transformed into a separate program. However, if you are running Access! when you load the text reader program (called "rd"), rd's window will appear inside the Access! screen. Also text files are now loaded completely into memory for faster scrolling. If you clear the screen (by selecting an option like a split screen or switch to/from an interlaced display), Access! will re-display any text that was on the screen before the screen was erased. For those who use Bill Hawes' commercial shell product *WSHell,*

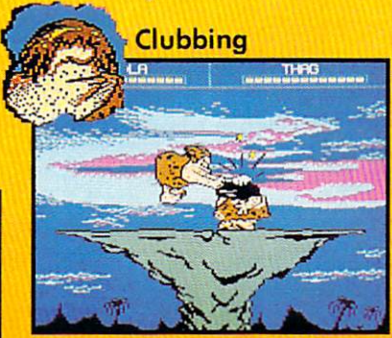
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CAVEMAN UGH-LYMPICS™

By Dynamix, Inc. and Greg Johnson

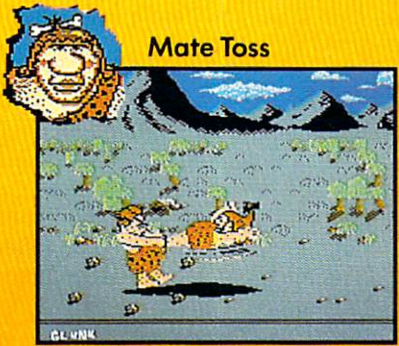
Before corporate sponsors and fashion gear, there were Cavemen. Competition was *ugh*-ly. Athletes won by bashing the other guy first. Pick your favorite Ugh-lympian. Club your way through six pre-hysterical events. Beat your friends to the Caves Of Fame.

Clubbing



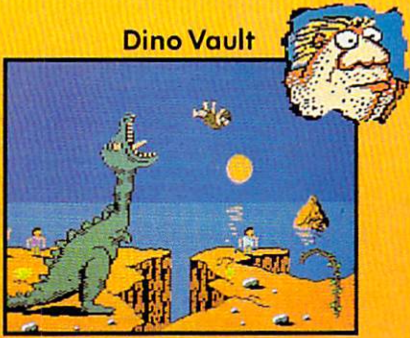
"Become one with club. Don't fall for look-at-birdie-in-sky trick. Don't check feet for fleas."
—Glunk.

Mate Toss



"Swing fast circles. Remember let go. Good for medals. Not good for getting dates."
—Crudla.

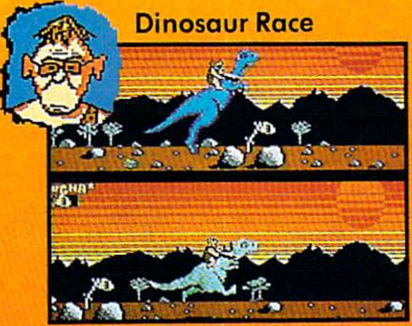
Dino Vault



"I like plant pole in totally cave-ular sand, soar high in air, wave to way-hungry dino."
—Thag.

The greatest Neanderthal athletes of all time share their secrets.

Dinosaur Race



"Club dino head, go faster. Too much club, dino bite dust. Vincent hate dust."
—Vincent.

Sabertooth Tiger Race

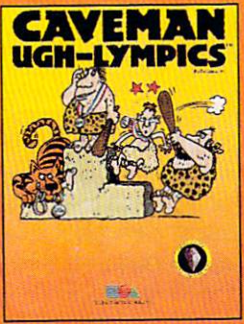


"Run fast fast from tiger. Watch out for cactus. Trip other cave-guy. Him big lunch for kitty."
—Gronk.

Firemaking



"Rub sticks fast. Make bright, ouchy, hot thing first. Try not get dizzy. Remember to duck."
—Ugha.



ELECTRONIC ARTS®

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Access!'s NewCLI command will open a NewWSH right on the Access! screen instead of opening a NewCLI.

You can now load in a font of your choice into Access. When using chat mode, you can even use two different fonts at once; one for the bottom send window and a separate one for the top receive window.

The phone directory now includes "Multi-Dial" gadget, which is Access!'s version of queue support for it's autoredialing. Although Access!'s queue support is basically of the sequential type (Similar to AMIC PD TERM, and unlike Online!, which has a more powerful user-programmable queue system), Access! at least allows you to tell it which number in the queue it should dial first (after dialing that first number, Access! proceeds to dial in a sequential fashion).

Keith has introduced script support with this version. Script commands can send and receive ASCII text (including a command that will toggle an ASCII capture), send a beep to the console, execute IF-THEN-type statements, set an internal delay period, hang up the modem, send a string to the modem and create labels. Of course, Access! allows you to attach a script file to any phone number in its phone directory. However, Access! does not sacrifice phone directory compatibility with the AMIC PD TERM/The Final List standard to do this. There have been many other enhancements, including MoreRows support, increasing the size of the Review buffer, color graphics changes, so those who use only two bitplanes with Access! will still have a decent looking screen, and more.

Although Access! still doesn't support the powerhouse protocols Ymodem and Zmodem (Keith says these are in the works), Access! is becoming a formidable terminal program. There's now much more to this terminal program than just pretty colors!

BattleFort: by Ralph Reed
(AmigaZone file #12787; Shareware: $25)

This is not a new game, but rather the new name for version 2.0 of Ralph's complex robotic combat game BattleMech, (last discussed in the September installment of this column). The reason for the name change is that BattleMech now has a new component to the game. Instead of just two or more players controlling robots in combat against each other, robots can now attack a computer-controlled fort instead. The most important aspect about the additions of forts is that you can now play BattleFort by yourself against the computer. As you might expect, you can design your own forts for BattleFort, but only after you send in your shareware fee to Ralph.

Video-Film: by Jim Robinson

This *VideoScape 3-D* animation is a sequel to the animation TellStar reviewed in the September installment of this column. Video-Film is also a three-part animation, although this time several spaceships are flying by a planet instead of just one, and the views are a bit different than in TellStar.

ClickDOS: by Gary Yates
(AmigaZone file #13438; Shareware: $15)

ClickDOS is another entry in the long list of DirUtil (Directory Utility) programs out for the Amiga. ClickDOS includes a small size (32K), iconification support, built-in commands and a preference for FAST memory instead of CHIP memory whenever possible.

Snap: by Jerry Fitzpatrick
(Shareware: $25)

This poor man's version of SPICE will perform nodal analysis on various electrical circuits. Snap includes support of dependent sources, and will analyze a circuit with up to 50 nodes and 100 components. The input file for Snap is a simple text file format.

AddIcon: by Donald Meyer
(AmigaZone file #11957; Shareware: $10)

This is a powerful program used for creation and/or modification of icons. Its simplest use is to create icons for a file, or add/alter icons for each and every file in a certain directory, including any sub-directories. Wildcards are allowed, and you can also have AddIcon ask you for each file if you want the program to touch it or not. Workbench users can even use extended selection to tell AddIcon which files to act upon. However AddIcon goes far beyond that.

First, you can tell AddIcon to touch only certain types of files, for example, files that are flagged by Workbench as Projects, Drawers and/or Tools. AddIcon even allows you to be much more specific. You can tell it to work on executable files, text files, IFF pictures (including different resolutions), ARC files and/or ZOO files. And naturally there is a configuration file in which you specify what file extenders denote that a particular file falls into one of the 13 programmed file types (unfortunately the user can not add his own file types).

You can also tell AddICon to modify only certain aspects of an existing icon. These options include changing the image, stack size, icon type, default tool, position and/or tool types. In the future Donald plans to add a file requester as well as a means to add an automation process, so the user can program a default operation. This would enable AddIcon to automatically perform that operation when asked without additional user input.

BarsnTone: by Mike Berro
(Shareware: $15)

If you work at video on your Amiga, this program can help you fine tune your equipment. BarsnTone generates a SMPTE color bar pattern as well as a 1KHz tone. The tone volume is adjustable within the program.

Bugs: by Jimmy Maher
(AmigaZone file #11823)

For those who have the Amiga session record/playback program Journal, this archive contains five Journal files which demonstrate five different bugs in version 1.2 of the operating system. Included in the demonstration are examples of the window resizing bug and the annoying Workbench "known volume" requester bug.

IBM: by David Donley
(AmigaZone file #12686)

If you liked the joke Commodore 64 emulator I mentioned last month, then you're really going to like this joke IBM-PC emulator! For you worry-warts out there, when you see a Guru first, don't panic.

Space: by Richard Stockton
(AmigaZone file #13180)

For those who already have a clock program, but are still looking for a titlebar program that displays info on free memory and drive space, Space contains four different such programs. Most of them display how much free space is left on the disks in drives df0: and df1: as well as how much free memory is left in RAM: and vd0:, although one also displays free space left on df2:, df3: and dh0:.

Stairs: by George Nolan
(AmigaZone file #12978)

A good-looking *Sculpt/Animate 3D* animation of a metallic ball bouncing up and down a set of steps. Although the ray-

traced graphics are quite good, the animation of the ball as well as the digitized sound effects could use some improvement.

VirusX version 1.7: by Steve Tibbett (AmigaZone file #13213)

Here is version 1.7 of the powerful and vital virus detection/elimination program VirusX. Last month I reviewed version 1.4 of VirusX. Version 1.7 of VirusX includes detection of three more viruses. The Byte Warrior virus and North Star AntiVirus were created to combat destructive viruses in the first place, but instead they have simply made the problem worse. VirusX also now looks for the "Obelisk Softworks Crew" virus. As I've stated before, if you think you have been infected with a new virus, please send a copy of this virus to Steve so that he can update VirusX to detect and eliminate it. Finally, for those who are thinking about writing an anti-virus virus program, don't do it! You are making the Amiga virus situation *worse,* not better!

DiskX version 2.1: by Steve Tibbett

This is version 2.1 of Steve's disk editor DiskX, (discussed in the November 1987 installment of this column). Some improvements to DiskX include interlace support, the ability to search for any ASCII string on a disk, support of all DOS devices, case independent string searches and recoverability of files that were deleted with the AmigaDOS DELETE command. DiskX now uses arp.library, so you need to install ARP on your Workbench disk before loading DiskX.

SPUDclock: by H. Bret Young

This unique clock program will speak to you. You can tell SPUDclock when to tell you what time it is. For example SPUDclock can announce the time every hour, every half hour or every quarter hour. The volume of the speech is adjustable. You can give SPUDclock a message to say when it announces the time. For those who like to run their Amigas 24 hours a day, you can even give SPUDclock start and end times for which to wake up and go to sleep, and when SPUDclock wakes up or goes to sleep, it announces this with a polite "good morning" or "good night."

BetterSpeech: by Dexter Orange

If you don't mind the overall quality of the Amiga speech, but are annoyed by the ridiculous pronunciation of some words, BetterSpeech can help. BetterSpeech will intercept any word the Amiga incorrectly interprets, and reinterpret for it. BetterSpeech's exception list comes with almost 50 entries, and you can add to that list if you like.

Xboot: by Francois Rouaix (AmigaZone file #13011)

This small utility will transform the code on the boot blocks into an executable file. If you have a disassembler or debugger, this will allow you to take a closer look at any boot blocks in which you suspect a virus.

Display: by Martin Hash (AmigaZone file #12785)

Finally a superior alternative to ShowANIM has arrived. Although Display was first written to show animations created with *Animation: Apprentice* from Hash Enterprises, Display also will show any ANIM format animation as well. Some of the features Display supports include varying the playback rate, freeze frame, single-frame mode and display of frame numbers. All these functions can be accessed via the keyboard while the animation in playing, instead of having to specify in the command line with

Continued on page 109

by Matthew Leeds

Allen Hastings: Film Maker

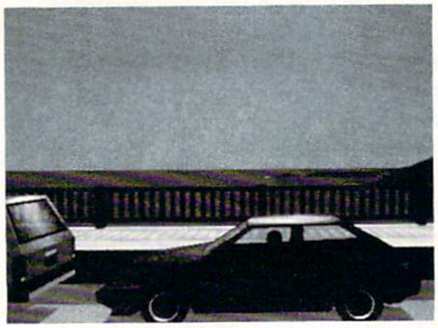
Allen Hastings' creation of *VideoScape 3D* was part of a natural progression that started in a seventh-grade BASIC programming class in junior high school. By the ninth grade he had written his first 3D program on the school's HP 3000; it printed out pictures of the Death Star's trench using a teletype terminal and ASCII characters. Two years later he started working for Lockheed in their Solar Physics department writing image-processing software in FORTRAN for Tektronix terminals. He has been both working for Lockheed and writing software ever since.

In November of 1985 he purchased his first Amiga. Less than a year later he showed the first movie produced using what was to become *VideoScape 3D* at a First Amiga User's Group (FAUG) meeting in Belmont, California. Titled "Verx," it was an interstellar saga of space war shot with an 8mm film camera and transferred to videotape. Since then he has produced "Infinite Loop," "ANIM Demos," "Apocalypse Real Soon Now," "Halloween 3D" and "The Machine."

His newest film, "Rush Hour," breaks new ground in several areas. It makes extensive use of HAM imagery, shifts from black and white to color and back again, runs about two minutes in length, and is one of the first three Amiga videos to be accepted into the SIGGRAPH film and video show.

SIGGRAPH (Association for Computing Machinery's Special Interest Group on Computer Graphics) is the oldest continually running annual conference for computer graphics. It is considered by many to be the most significant computer graphics event of the year. SIGGRAPH is a combination of panel sessions, courses, exhibition, film and video show, art show, special interest groups and social functions. Individuals and organizations responsible for advances in computer graphics technology present discoveries and innovations through formal papers and displays.

SIGGRAPH, held in Atlanta during the first week of August, drew 20,000 people who attended more than 28 courses, presentations of 37 technical papers , 13





panel discussions, and wandered through exhibits of over 250 vendors. Commodore Business Machines previewed the Amiga at the 1985 SIGGRAPH in San Francisco, and it has remained an important venue for the Amiga's remarkable graphics.

The SIGGRAPH Film and Video Show is known as the world's premier event of the year for computer graphics animation. Film makers and computer animation specialists from around the world submit their most technically excellent pieces for this prestigious event. Selected pieces are chosen on the basis of innovation in technology and visual creativity by a jury of computer graphics experts. Tickets to the film and video show are so valued that they are often scalped at prices usually found only at rock concerts.

This year, for the first time, SIGGRAPH selected three Amiga-generated entries for their celebrated Film and Video Show; "Rush Hour," Winners Circle Productions' "Time and Again" and Byte by Byte's "Desktop 3D" were featured.

Special events at this year's SIGGRAPH included a night-time laser light show at Georgia's Stone Mountain national park. The laser beams create dramatic stories, fun characters and graphic images choreographed to popular, jazz and classical music. The laser show is projected onto a natural one-million-square-foot granite screen.

I interviewed Allen Hastings just prior to his departure to Atlanta regarding his film "Rush Hour." Allen talked at length about the inspiration for his films, the techniques he uses and some thoughts on the creative process:

Allen Hastings: The film I'm doing for SIGGRAPH is created entirely with interlaced overscan HAM images. The film is being made with a new program; I guess you could consider it either a new version of *VideoScape* or an entirely new program, depending on what else I add to it before it's finished. It has some new features like texture mapping, and it also supports the use of a 68020 with a math chip. I'm using the Hurricane board with a 68882 math chip.

I used *Aegis Modeler 3D* for all the objects in the film. It is definitely the most logical and consistent user interface. The different selection modes and the way in which all the operations work in each selection mode are very intuitive. It's an elegant system, and it is also very precise. It only creates the polygons required for an object, without any extraneous points or polygons left over. Some other object-creation programs create objects with extra polygons inside the object that just slow down rendering or interfere in other ways.

Modeler also keeps its coordinates consistent. Some other programs don't always keeps points at the exact same locations all the time. In the film, I did a lot of real-world simulation, pictorial-quality animation. *Modeler* lets you use real-world measurements like meters and kilometers. The film was an attempt to model the San Francisco Bay Area in 3D, in particular downtown San Francisco. That turned out to be too big a job, but I did succeed in creating a very detailed Golden Gate Bridge, which features prominently in the film along with lots of detailed cars. I spent about four months designing everything for the film.

I just close my eyes and see it. I can imagine in 3D. I often do that as I'm falling asleep. Unless I picture it in my mind, I don't know where to place the objects and how to move them.

The film is a fantasy that most people have when they are stuck in rush hour traffic. The title of the film is "Rush Hour." It's about a driver stuck on the Golden Gate Bridge, trapped in a long line of cars. He drifts into a fantasy where his car transforms into a Lamborghini. Wings slide out from the sides, and he begins to take off and fly over everyone's head. I thought about that for a long time.

The film is very short, no more than about two minutes, although that is quite a long time for computer animation. It's long enough to get the plot across, and there are a lot of exciting developments that occur. He gets chased by helicopters, runs out of gas and falls; the helicopters accidentally blow up a landmark. The whole thing is very fast paced. Finally he drives up to his home, a nice place on the coast, and the sun is setting into the ocean; a loud car horn sounds and the scene fades back to the bridge where a small gap has formed in the line in front of him. The beginning and end of the film are done in black and white, and the dream sequence is done in color.

When I create a film like this I start with a storyboard. I draw still frames for each scene and try to keep in my mind details like camera angles and that sort of thing. There are a lot of film-making rules that I use to make the editorial flow go nicely. It is very important to keep the direction of objects, left to right or right to left, consistent during the film.

I started out making films with models and stuff, not computers. I did claymation, used plastic models, anything that I could get my hands on. I also read a lot on direction, film-making. That's something anyone interested in film-making should do, regardless of what they are using to make their films.

I haven't always been able to get my films to come out the way I wanted them. Sometimes the tools are just not there yet. A good example is when I was limited to making films with ANIM files. I had to limit myself to camera motions that would work in an ANIM file. They had to be small enough and short enough to play back smoothly, and that cut out some of the scenes I wanted to do. Now that I've gone back to single-frame animation, I can do whatever I want motionwise.

I use a Sony 5850 ¾-inch single-frame-capable video recorder interfaced through a Lyon-Lamb single-frame controller. This lets me record my film a single frame at a time. The setup works perfectly, no glitches, no missing frames, and no multiple frames. The single-framing capability in *VideoScape* works just fine with this setup, but I wrote my own controller software to work with the new animation software I'm using.

The software I wrote lets me single frame ANIM files to the 5850. It turns out that I had to do it that way instead of recording after rendering. The new software takes longer to render a frame because of its use of interlaced overscan HAM, and the extra time exceeded the time the 5850 would stay in record/pause mode without damaging the tape. I could have used the MicroIllusions transport controller and rendered each frame as an IFF file, stored it to disk, and then single framed them to the 5850, but the amount of storage needed for the number of frames I created would have required an optical disc for storage. Storing them as compressed ANIM files worked much better. The entire file fits on about a third of my hard disk.

Using the Lyon-Lamb controller the pre-roll time is about five or ten seconds. Adding the time to bring the image up still kept me within the record/pause limit on the 5850. When Infinite Loop was created we hand edited on a 5850, and there were some duplicated frames. I did discover during editing on Rush Hour that the Sony edit controller is only accurate to about two frames, so its not as accurate as the Lyon-Lamb.

I did use an S-VHS Panasonic AG-7500 as an experiment, and I found it was single-frame accurate. They don't claim that it is but it was. The counter is not accu-

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Most of the files you'll download from Q-Link are meant to be used on your Commodore 64 or 128 system, but there are other files available. You'll find files and programs for the Amiga, MS-DOS and CP/M machines as well as GEOS-related items. Each of these has a special method or utility required to get the file to the appropriate environment once it's downloaded to your 64 or 128 system. Q-Link can only upload from or download to a 64 or 128 system, so check the various special interest areas for additional information on handling these situations.

Always be sure to check the description and comments associated with a file before you download it. Many times you'll find important information on how to start or use the program that may not be obvious. Also, there should be some indication of special file formats that may need to be converted before the files can be used. Be sure to watch for ARC, Lynx, Library and other file archives created to facilitate downloading a group of related files as a single file, besides compressing the data to save transfer times.

By the way, one user recently asked about the serial numbers that appear in every message in the message boards and in every file description in the libraries. Well, these numbers are assigned whenever a message is entered or a file is uploaded to the system. The serial number appears in the header line following the "S#" prefix and uniquely identifies each message in the system.

The serial numbers are used primarily by the folks at Q-Link for system maintenance when deleting or relocating a message. So if you're reporting a problem with a message or file to link, include this number with any other pertinent information to make it easy for the people at Q-Link to locate a given message.

Another recent user comment concerned comparing the cost of using People Connection to the new local telephone hotlines or party lines. They pointed out that at $6.00 per hour on Q-Link, you actually get quite a bargain compared to as much as $60 per hour or more for the new wave of party lines.

Well, that's it for another month. Keep those comments and suggestions coming, and maybe I'll mention your screen name here in print some day! As usual, I can be reached almost daily via E-Mail to RBaker. Hope everyone has a happy holiday season! C

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an adventurer asks this question, or utters any of the following: "Now where am I?"; "Those stairs were *here* a second ago, weren't they?"; or "*Nothing* can kill my party now that I've got this Magic Object!")

A neat trick that will spare you hours of redrawing the same maze is to tape a piece of clear plastic over the map sheet and draw on it with a liquid-based pen like the kind used with overhead projectors. When you make a mistake, just wipe it off and redraw it—much easier and less messy than erasing lines drawn with a pencil. After the maze is completely mapped, copy it to paper and file it in the notebook, since you'll often have to return to a dungeon later in the game.

Magic and Combat

To work wonders with magic, reread the manual and study any relevant clues. Many monsters are particularly susceptible to one spell or spell type. Once you've discovered that Smokey the Ogre's weak point is a Fire spell, you've got it made. Look for convenient ways to restore spell points, for the toughest mazes sometimes have a few Spell Regeneration squares

scattered about.

Effective combat means mastering a few elements of tactics and strategy. Long-range weapons (and spells) can wear a group of monsters down before they get close enough to wear your group down, then a few well-placed swords and maces will finish them off. Magic weapons often exist, though you may have to experiment to learn their effects and most appropriate targets. Sometimes their targets are apparent, such as the Golem Staff in *Wizard's Crown*.

In a Hurry? Cheat!

A few words on cheating—it's *your* fantasy, so if you want to cheat, go right ahead. (All's fair in love and dungeons, I always say.) Some people, and it's amazing how many of them are game designers, will say you're only cheating yourself—but you paid the $39.95 for it, so you're entitled to do with it as you please (except, of course, make 40,000 copies and give them to all your friends.)

Some games have bugs, others suffer design oversights that leave loopholes large enough to fly a Golden Dragon through. But why complain when these often allow you to quickly score thousands of experience points or gold and build up a powerful party in no time? Once your team can muster enough MIBL and DRBR spells to defeat the Berserkers (at 5N, 12E, 2U in the Castle) in *Bard's Tale I*, for example, you can return there and wipe them out over and over and over—netting 60,000 experience points for each character every time. Yes, it is repetitious and boring. But so is getting killed over and over and over . . .

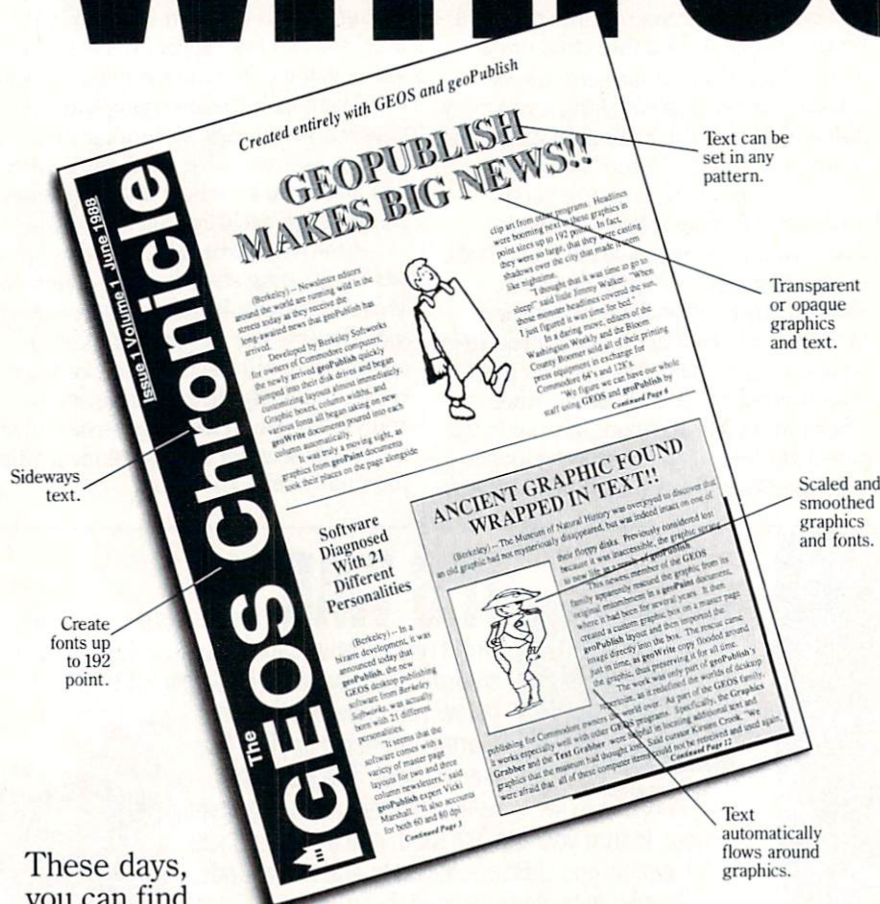
In many RPGs, you can return to the spot where you found the Sword of Sockittome and—lo and behold!—it's still there. You can arm someone with the powerful weapon or sell it. Programs that erase items when taken (*Wasteland*) can be sidestepped by simply making a new play disk of that particular dungeon disk or resetting the dragon (*Wizard's Crown*).

In many games that permit you to make several copies of your character disk, you can move people back and forth to "clone" weapons, objects and gold. Here's a quick lesson from *Phantasie I*: Make two copies of the scenario disk, then label one "good disk" (the one you want to keep playing on) and the other "dummy." After you get lots of potions (crucial to this game) and weapons and other valuables, sell everything you want cloned to a Town, say Pineville (Town 2), then teleport to Town 3. (When you teleport, the program writes to disk the fact that the goods are now in the shop in Town 2.) Remove the good disk and insert the dummy.

Teleport to Town 4, insert the good disk and teleport to Town 2. Buy back the stuff you just sold, insert the dummy disk and teleport to Town 3. (The purchase of the goods is now written to the dummy disk, so as far as the program is concerned, they are still in the shop in Town 2 on the good disk.) Insert the good disk and continue cloning, or proceed with the real game. By noting when a program writes things to a disk, you can find loopholes like this in lots of games. (But always make a backup of your disks before trying such maneuvers, just in case something goes wrong—you are, after all, fiddling with bits and bytes for which the programmer has reserved exclusive fiddling rights.)

Let me emphasize that the above methods for cheating should, in the opinion of This Adventurer, be used only as a last resort. Observe the Adventurer's Creed—get the gold, kill the monsters, save the land—and apply the *preceding* advice, and you'll have a clear conscience and feel a stronger sense of accomplishment when you finally solve the quest. C

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These days, you can find all kinds of programs that call themselves desktop publishers. Oh, one may drop a drawing here or create a column there. But don't let anyone kid you.

Nobody's got anything like geoPublish.

You see, geoPublish is a real desktop publisher. With hundreds more features that unleash your layouts across an endless number of pages, and leave your non-GEOS friends frenzied with frustration.

"Full featured desktop publishing on the Commodore 64? Including laser printing? If I hadn't seen it with my own eyes on my own Commodore 64, I wouldn't have believed it, either."

—MicroTimes, March, 1988

With geoPublish, you pour your geoWrite text into columns and around graphics. Automatically. You can use any of the 21 preset page layouts or any of the zillions you come up with yourself.

After that, it's off to fun city.

The geoPublish toolbox is filled with goodies that help you create all kinds of special effects in almost every area. for example, you can customize over 80 GEOS compatible fonts. In bold, italic, underline, or outline. In any combination you choose. Up to 192 points high.

"Of the three software packages I used (geoPublish, Personal Newsletter, Outrageous Pages), geoPublish most resembles professional desktop publishing programs."

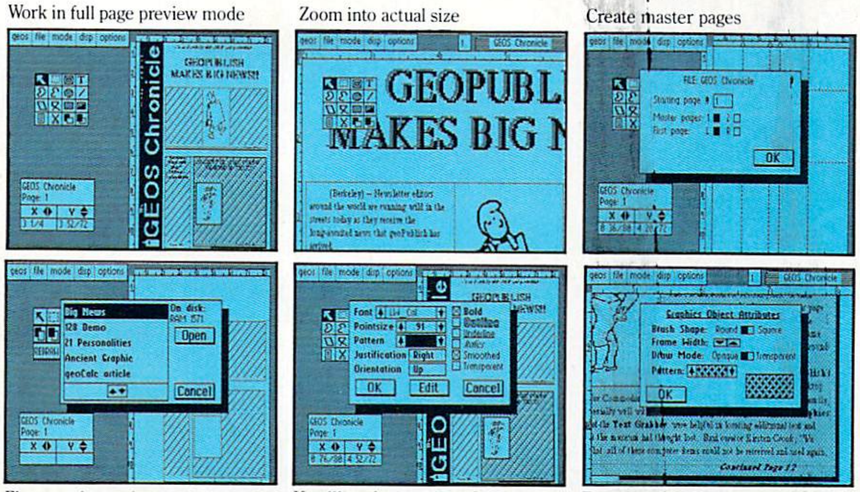
—RUN, March 1988

And that's just what you can do with type. You can also create columns. Boxes. Banners. Enlarge or reduce graphics. Zoom in for detail work. Preview the entire page. And print the whole thing out on a LaserPrinter for a razor sharp look.

Of course, those aren't the only reasons we're excited about geoPublish. It's also because major magazines—like the tough guys at INFO

D EVERYONE ATURE STORY.

—are raving about it, too. Saying that people will use geoPublish *"to retire their Print Shops and Print Masters"* and that *"Newsroom pales in comparison."*



Work in full page preview mode — Zoom into actual size — Create master pages — Flow text into columns — Headlines in 4 to 192 points — Easy graphic object manipulation

Hey, with press like that what more need we say?

Well, we can say we've got even more features. In fact, a whole What-You-See-Is-What-You-Get wish list in the chart to your right, filled with features that mean business. Things like text in any pattern and automatic font smoothing and stuff that nobody else ever thinks of.

So if you're serious about desktop publishing, take a look at geoPublish. For Commodore owners, it's the only feature story worth taking seriously.

geoPublish Features
General
- WYSIWYG, What-You-See-Is-What-You-Get.
- Import graphics from geoPaint.
- Import graphics from Print Shop, Newsroom, Print Master™ using GEOS Graphics Grabber (sold separately with Deskpack Plus).
- Full page and zoom display modes.
- On-screen rulers, digital cursor control allows exact placement in full page edit modes.
- Supports over 80 GEOS compatible fonts in point sizes ranging from 4 to 192 point (.05" to 2.6").
- Plain, bold, underline, outline, italic, superscript and subscript, and any combination of these typestyles allowed for each font.
- Supports dot matrix and Post Script laser printers.
- Supports up to 16 pages in length, larger documents can be created by setting the starting page number.

Master Page Mode
- Support for left and right master pages.
- Set up to 16 guidelines for aiding graphic and column layout.
- Automatic page numbering can set starting page.
- Automatic date stamping.
- Full graphic tool box for master page graphic design.
- Library feature for saving master page layouts, product comes with a master page library with several standard layouts.

Page Layout Mode
- Imports text from any Commodore word processor.
- Flexible design and placement of text columns, column layout, size and combinations can be altered at any time.
- Built-in editor supports full word processing features of geoWrite 2.1 for text flowed into geoPublish columns.
- Snap to guides feature allows for easy layout using master page guidelines.
- User-selectable gutters (space between columns).
- Support for unanchored (flow with text) as well as anchored (text flows around) graphics.
- Automatically flows text around graphics and from page to page keeping track of up to 16 separate word processing documents.

Page Graphic Mode
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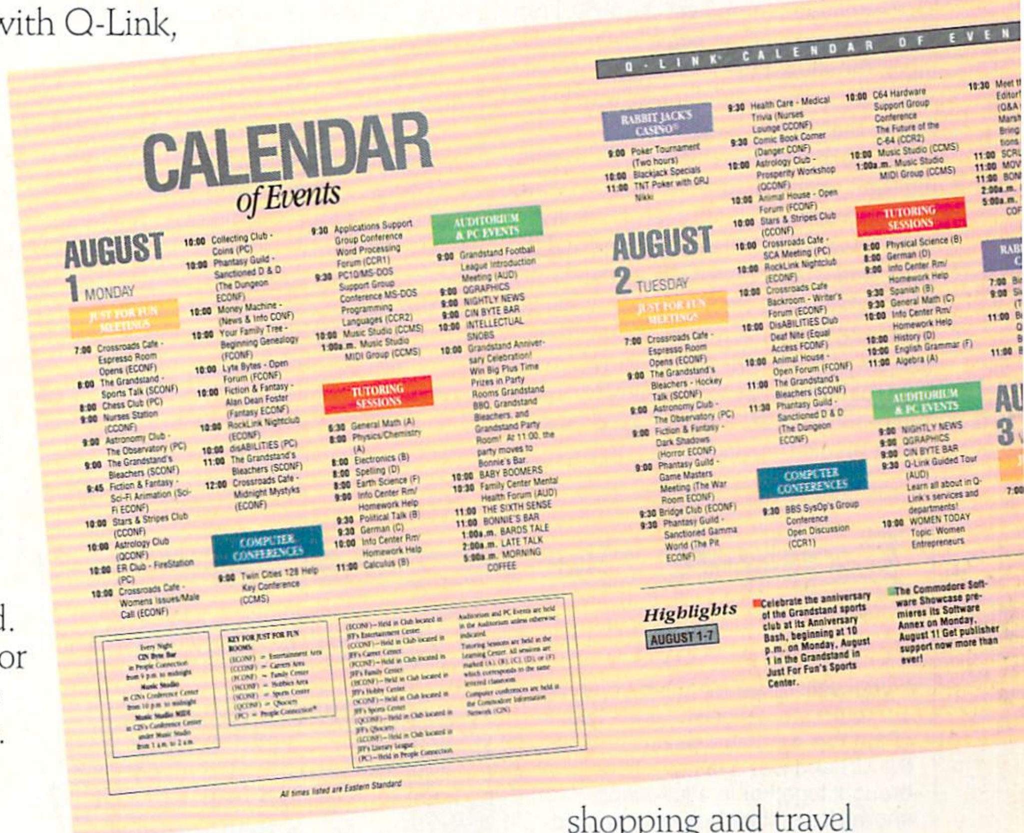
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Continued from page 59

rate, but if you go by what you see on the monitor, and move using the jog shuttle dial, it works fine. I couldn't test it with the Lyon-Lamb controller, since it needed a different cable. It took us about two and a half hours to do a five-second scene by hand, and we decided that was enough for a test. Without the computer controlling the recording it takes a very long time to lay it down on tape.

It is also easier to get access to editing facilities if you use ¾-inch tape. I work at Lockheed, and we use ¾-inch stuff there. That's another reason I got the 5850; I can do some of my work at home instead of being in the office. I use an Amiga at work to create some short simulations, satellite flybys, that sort of thing.

I'm much more excited about film-making than programming. I have been doing a lot of programming to support the features I want: the texture mapping and the black and white scenes in overscan hi-res with sixteen gray levels. That way you get the smooth shading and highlights that you get in HAM without the HAM artifacts that otherwise might mar the scene. You could even get a sepia tone effect to give it an old time look.

Continued from page 26

They have equipped you with a highly sophisticated pocket computer with many great functions to help in your quest.

room, arm time bomb to blow up safe, and arm mine for agent to place. In order to use one of these you must find the proper commands. When your selection is completed, click the fire button, and the command you have chosen will be carried out.

Summary

Impossible Mission 2 combines a unique blend of strategy, arcade action, graphics and sounds to come up with one of the best game sequels ever. During play, you can either pause or save your current position, allowing you to continue where you left off. Also, you will find that the manual gives a full, easy-to-understand explanation of the game. I have been playing for two months now, and I still can't complete it (therefore, not so many hints). In fact, you might even say this game is *impossible* to conquer, but every game has its Achilles heel (now if I can just locate it on Elvin). If you enjoyed *Impossible Mission* or just like an exciting strategy-action game, then you are bound to enjoy this exciting sequel!

Pocket Hints for the Super Agent

- Time is something you can't afford to waste. The save game option is one important feature you should use to your advantage. When exploring either a new passage or room, save the game before entering. Once you have figured out how to get past the obstacles, retrieve the music from the safe and exit, then load the saved game. This will allow you to complete that section of the game in better time, since you have done it before.
- Check your security code numbers as frequently as possible. Once you have the music and security code, exit the passage. Don't waste precious time searching for more security icons for the computer, for there will be plenty to obtain in the next passage.
- If you can't enter a room from your current position, then exit and move to the room above it. In most cases you will find a lift that will take you to the room that was impossible to get to.

by Mark Jordan

A Plethora of 128 Stuff



ED SAUK

This month instead of the usual type-in program, we will look at a plethora of Commodore 128 items, several of which have been weighing heavily on my heart the last while.

Plethora Item #1: The 128D

The Commodore 128D is certainly not news these days. Lots of you own them. I own one. But for those of you out there wondering: should I sell my original 128 and get a D model, here's my advice:

Yes.

That was blunt enough. Now here are my reasons. For one thing, the keyboard is so much nicer that it alone may make it worth it to you. Being a writer, this is an item of true concern for me. I love the 128D's keyboard. It isn't just the improved tactile response. The fact that you can move it on your lap or out of your way (I put mine on top of the computer when I need desk room) makes it really nice.

Another reason to trade up to the D model is that the new machines have the new ROMs in both the 1571 drive and the 128 itself. These are a definite improvement. No more five-minute strip searches on disks in the 1541 format before allowing them to boogie. No more CAPS/LOCK uppercase Q bugs. Not only are the bugs gone, but the 128D also boasts an extra 48K of video RAM for the 80-column mode. This is quite valuable to the machine language programmer as well as users of *BASIC 8*.

Third, the solid metal console might be reason enough to make the trade. Now you can set your monitor right on top of the computer. To my observation, everything about the 128D seems more solid and durable. The system keeps cooler, there's no bulky power supply to mess with . . . it's simply a well-designed system (except for the joystick ports, which are a pain royale to get at).

Fourth, it has a built-in disk drive. Not only is this convenient, it offers a subtle benefit that you'll really appreciate: fewer cords to get tangled behind the desk.

Finally, if you've been wanting to add a second drive to your present system but just haven't had a good enough excuse to, this is it. Sell your present 128 computer (keep your 1571) and buy the 128D and you'll end up with: 1) a two-drive system, 2) a new computer and drive complete with warranty, and 3) only about $250-$300 less in your pocket than when you started. That's only a little more than you'd have paid had you simply bought another 1571 drive.

Of course, we're not all made of money. I, of all people, understand that reality. But I speak from experience: I bought the 128D and have never regretted it.

Some of you may be wondering: why should I invest more money in an eight-bit computer? Isn't it the twilight of these machines?

My opinion: yes, it is the twilight of eight-bit computers. But it's like the twilight on the North Pole—a real long one. (You know, up there there is only one day and one night per year with one mean long sunset in between.)

Your Commodore 128 does everything you need, unless you are chomping at the bit to get into desktop video. When you're ready for that, get an Amiga. But if word processing, databasing, spreadsheeting, game-playing, programming, telecomputing or educating are the reasons you own a home computer, then eight is enough.

For my money, the Commodore 128 is one great machine. I may be biased—I do write this column—but I've used MS-DOS machines, Apples, Radio Shacks, and others and, bias or not, the 128 is the best of the lot.

Plethora Item #2: 128 Books

One of the hidden costs of owning a computer is the cost of books that you will want and/or need for your machine. The following six I bought with my own money. Here are my observations:

1) *The Commodore 128 Programmer's Reference Guide* (Bantam Books). This thick book (743 pages) has gobs of useful info about your machine. Hardware buffs will find the specifications chapter indispensable. For me the most useful chapter was one which details how to program the 80-column chip. My advice: every 128 owner should buy this one.

2) *Mapping the Commodore* 128 (Compute! Books). This is a must for programmers and a "good-to-have" for most everyone else. I would not be without this book.

3) *Compute!'s 128 Programmer's Guide* (Compute! Books). This book is typical of books by Compute!—packed with useful info that you won't find anywhere else. And it is like other Compute! titles in its readability. There are also many useful routines which programmers and tinkerers alike will find useful.

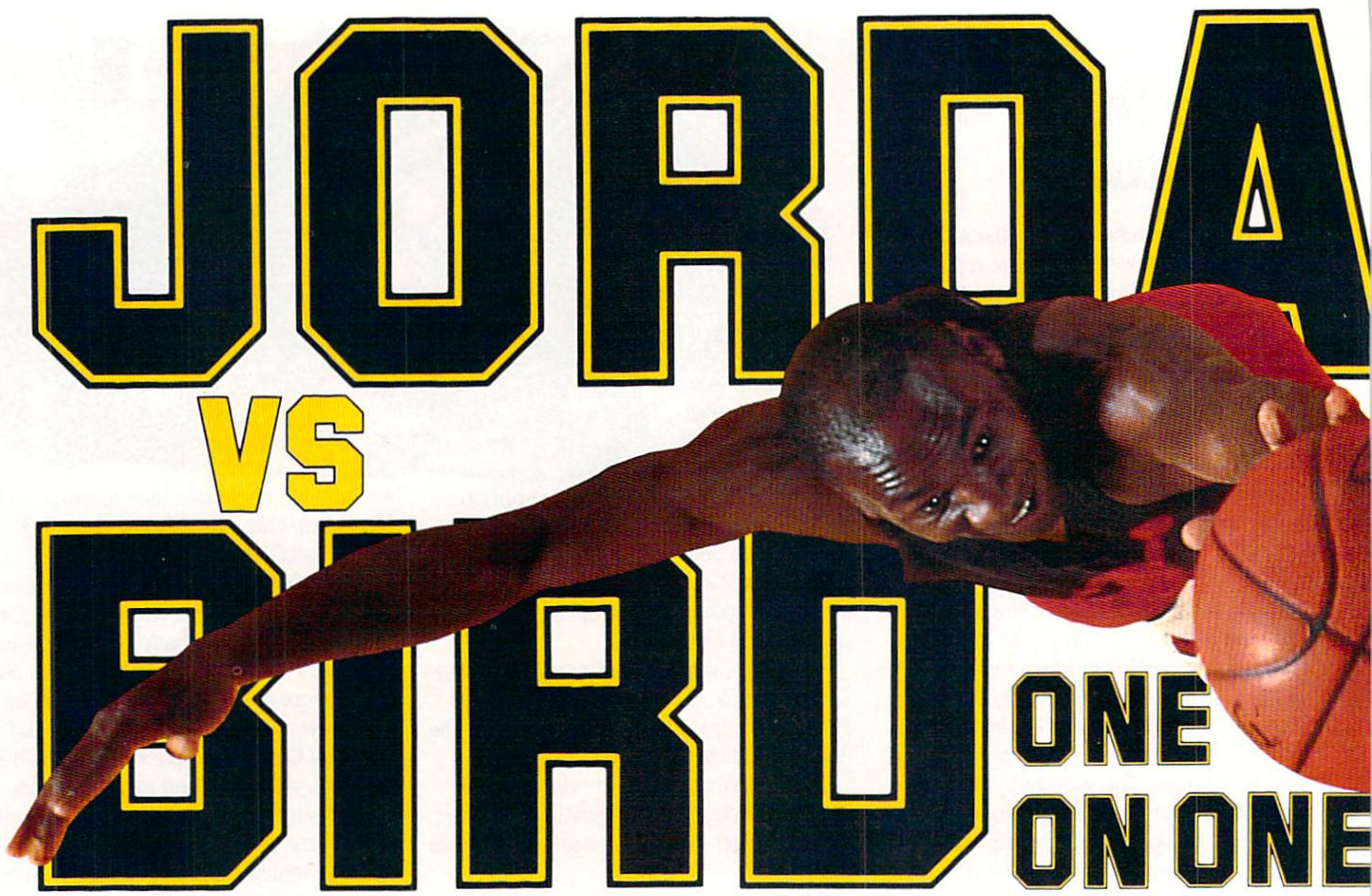
4) *128 Internals* (Abacus). This was the first book of any value out for the 128 back in the early days. It also has a whopping 232 pages of ROM listings which are virtually useless to all but intense hackers. Also, this book contains several chapters on the VIC and SID chips which are mostly just a rehash of information you can find in books for the 64. If you're looking for ROM listings, buy this book. Otherwise, save your money.

5) *BASIC 7.0 Internals* (Abacus). This book also contains gobs of commented ROM. For those of you machine language programmers who like to tweak BASIC, it's indispensable. For the rest of you, you'll get better value for your dollar with this and other magazines.

6) *Commodore 128 Troubleshooting & Repair* (Howard W. Sams & Co.) If you are a hardware hacker, this one looks good. I say "looks good" because I'm not a hardware hacker, and I didn't really need the book. But that doesn't mean you won't find this book quite useful. Let me put it this way: if you don't know how to read a volt/ohm meter, don't buy this book.

Plethora Item #3: *Twin Cities 128*

A lot of you 128 owners out there probably haven't ever heard of this 128-specific magazine. There's a reason for this: the



folks who put it together—mainly Loren and Avonelle Lovhaug—have built this magazine from the kitchen table up, and they've done it on a shoestring budget. Advertising doesn't come cheaply, so they have depended on word of mouth.

Well, let me add some words from my mouth: as a 128 owner, you need to check out this magazine. I like it. The latest issue is 28 pages in length, and 25 of them are advertising-free. The content of the magazine is typical of all computer mags: reviews, technical tips, and a few short, tutorial-style, type-in programs. It also seems to have quite a bit of fresh news from the 128 front (psst, and some hot rumors).

I suggest you buy their new book, *Twin Cities 128 Compendium Book #1,* which is a collection of the "best of" their first 18 issues. If you like what's in it, you'll want to subscribe to the magazine ($25.00 per year). Order from *Twin Cities 128,* P.O. Box 4625, St. Paul, MN 55104.

Plethora Item #4: GEOS 128

Since I write the GEOS column for this magazine, there's no sense repeating what comments will be found there. I would like to say this, however, while in "The 128 Mode." GEOS 128 is a very useful product if you're interested in a drop-down menu, graphic environment. If you don't own GEOS, I think you should.

The question is, if you already have GEOS, do you need the 128 version? The answer is, it depends. It depends on whether or not you use a GEOS program as your main word processor. If you do, then GEOS 128 is worth buying. It allows you to see the full width of the page on the screen, and that is the reason a lot of us bought 128's in the first place.

Other than that reason, until Berkeley comes out with more 128-enhanced GEOS applications, there's really no extra value in having the 128 version. However, if they do as nice an upgrade for the 128 version as they have done with GEOS 2.0 for the 64, then it's time to take your buying shoes back out of the closet.

Plethora Item #5: The C128 Developer's Package

I have been spending some time with this software package from Commodore. It comes with two disks which contain an excellent assembler, a super editor, a whole gob of utilities, mouse routines galore, burst routines, and fast loaders for 64 mode. It's simply a plethora (there's that word again) of programmer's goodies.

How much does it cost? About $50.00. It's worth it because it offers so much. I don't have time to detail all the goodies within but here are my impressions of the editor/assembler:

The editor, called ED 128 Full-Screen Editor, has been patterned after Digital Equipment's EDT screen editor. It allows you to type in your machine-language source code much the same as a word processor allows you to type your letters. You can cut and paste blocks of text, search and replace text, jump all over the document with minimal key presses, have lines longer than the screen width, scroll up/down left/right, change word case, and more.

The assembler, HCD65, is a professional-quality assembler patterned after the same one used by Commodore systems software engineers. It allows you all the conveniences of a full-featured assembler plus an advanced macro facility which allows you to do all kinds of things I haven't experimented with yet. What I like best about it is that it is very easy to use. There aren't a lot of unnecessary parameters

needed to get it to work.

Plethora Item #5-B: Names and Numbers

John Dvorak, noted computer columnist, recently struck a chord with me when he wondered why computer manufacturers were so big on letter/number product names. Like the HCD65 mentioned above, the OS/2, or Texas Instruments' incredible tongue-twister, the TI 99/4A? Folks hated the name of Tandy's TRS-80 so much that they simply changed it to "Trash 80."

Sorry to say, Commodore has not escaped the number mania. PET was a good name. Then came the VIC-20. VIC, I liked, but the 20 was a step down. Next came the Commodore 64, the Commodore 128, and now the Commodore 128D. Unnh! It hurts. And don't forget the 1541, 1571, and now the 1581 disk drives. Not much personality in those names.

Think how much more flavor it would've added to call those three disk drives "Larry," "Moe" and "Curly." Well, maybe that would make them seem a little less smart than they are so how about "Aristotle," "Plato" and "Socrates"?

When Commodore came out with the Amiga, I thought, "Now here's a machine with personality." Even the chips inside that machine have interesting names like "Agnes" and "Portia." Unfortunately, they're already tacking numbers onto the end of its name. Still, *Amiga* is a great product name.

Trivial point? The sales success of the 64 and 128 would seem to say that it is. But maybe not. If computers really do intimidate people, then maybe it's time to make their names a little more charming.

Case dismissed.

Plethora Item #6: WarpSpeed Cartridge

I have been using this product from Cinemaware for several months now, and I like it. A lot. It is superior to FastLoad with its utilities (especially if you have a two-drive setup), and it works in both the 128 and 64 modes (though you do have to flip a switch). It also has one of the fastest copy utilities around which has a sophisticated data cruncher which cuts down on disk swaps. Get it.

Plethora Item #7: 128 Compilers

I have been working on an arcade game in BASIC which will settle the question once and for all of whether a commercial-quality arcade game can be written in BASIC via a compiler. In my efforts I have unearthed some important information that would-be compiler-ers should note.

For one thing, the Abacus compiler does not allow you to use the SPRSAV commands. This is a great pity because, 1) this is one of the best statements available in BASIC 7.0 and 2) Abacus' compiler is the fastest of the ones I've used. It even allows for machine language compiling which is really fast.

Blitz! 128, the other most often-used compiler for the 128, allows SPRSAV which is good. But it seems to do all kinds of strange things with some of the more esoteric graphic statements. I have written to Skyles and am awaiting a response. I will report more on this in that upcoming two-part series.

Pleth'ed out? I could go on and on, but space is at a premium. After more than three years now of thrashing on my Commodore 128, I feel compelled to end this piece on this note: the 128 is still the best. It's a machine with a plethora of character. (I just wish they'd called it "Hurdler" or "Spirit" or "Moses.") C

1989 Graphics Contest

COMMODORE 64 & AMIGA

Commodore Magazine is sponsoring our fourth annual Graphics Contest. Two categories are available for aspiring Commodore artists: Commodore 64 and Amiga. Winners will receive a cash prize, and the winning graphics screens will be published in the June 1989 issue of _Commodore Magazine_.

COMMODORE 64 CATEGORY PRIZES

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Five Runners Up: $100 and publication in *Commodore Magazine*
Honorable Mention: Publication in *Commodore Magazine*

AMIGA CATEGORY PRIZES

Grand Award: $500 and publication in *Commodore Magazine*
Five Runners Up: $100 and publication in *Commodore Magazine*
Honorable Mention: Publication in *Commodore Magazine*

GRAPHICS CONTEST RULES

1. This contest is strictly for amateur artists. Anyone who derives more than 10% of his/her annual income from the sale of original artwork is ineligible.

2. Employees of Commodore Magazine, Inc., Commodore Business Machines, Inc., Commodore Electronics Ltd., Commodore International Ltd., their advertising and promotional agencies and their immediate families are not eligible to enter this contest.

3. Each entry must be wholly the product of the developer in whose name the entry has been submitted. Copyrighted images are not eligible. This includes record album covers, movie figures, famous paintings and cartoon characters. Outside assistance is expressly prohibited and will provide cause for disqualification.

4. A maximum of two screens per person is allowed. You may submit either two screens for one computer or one screen for each computer. If a contestant submits more than two screens for consideration, all of that person's entries will be invalidated.

5. All entries must be submitted on disk, 1541 format for the Commodore 64 and 3.5-inch format for the Amiga, with the following marked clearly on the disk's label:

a. Contestant's name, address and phone number
b. Picture title(s)
c. Graphics package or programming aids used to create the graphics
d. The words "GRAPHICS CONTEST"

A photo of the screen display or a printed copy of the screen does not constitute an acceptable entry.

6. All entries must be postmarked no later than January 31, 1989. Mail to: *Commodore Magazine*, 1200 Wilson Drive, West Chester, PA 19380, ATTN: GRAPHICS CONTEST.

GENERAL CONDITIONS

- Graphic screens are judged on originality, creativity and best use of the computer's unique graphics features.
- Entries will be judged by the staff of *Commodore Magazine*.
- Make sure your mailer will protect your disk from damage. Affix sufficient first-class postage. Mail your disk and the official entry blank to the address shown above. *Commodore Magazine* accepts no responsibility for lost or damaged entries.
- Entries will become the property of *Commodore Magazine*, which reserves the right to adapt, use or publish all entries received. No entries will be returned, so be sure to make a copy of your entry before you submit it to the contest.
- Non-winning entries will not be acknowledged. Winners will be notified by March 15, 1989. Taxes on cash prizes are the winners' responsibilities.

(PLEASE PRINT)

Name ______________________

Address ______________________

City ______________________

State ____________ **Zip** ____________

Phone (____) ____________ **Age** ____________

Signature ______________________

Parent's Signature ______________________
(If Contestant is Under 18)

Picture Title #1 ______________________

Computer ______________________

Graphics Package/
Programming Aid Used ______________________

Picture Title #2 ______________________

Computer ______________________

Graphics Package/
Programming Aid Used ______________________

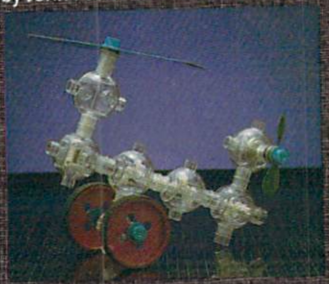
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Buyer's Guide to the Best of 1988

64/128

Hardware

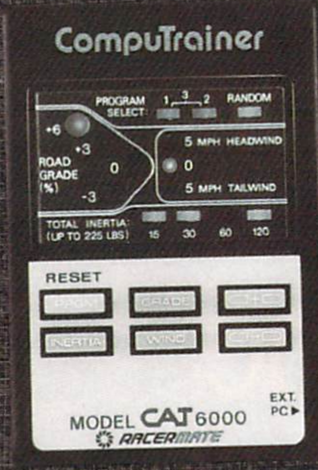
by John Pustai



Robotic Workshop

Multibotics, Inc./Access Software
$149.95 Home Version (MB230)
$299.95 School Version (MB230T)

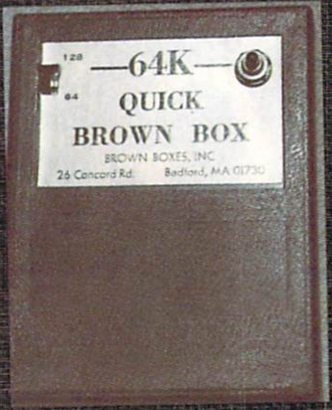
A complete robotic and scientific workshop which contains an interface unit, a ten-foot remote-operation cable, motors, sensors, Capsela-based construction components, software and instructions for 50 projects and experiments. Projects include infrared sensing systems, digital storage oscilloscopes, digital voltmeters, speech digitizing and playback systems, cars, cranes and robots. Challenging for the beginner (requires no knowledge of programming), individuals with minimal understanding of BASIC programming, and to the advanced programmer and hobbyist.



CompuTrainer with Racer-Mate Challenge Cartridge

RacerMate
$595 for Trainer
$99.95 for software cartridge

A bicycle trainer that electronically matches road conditions. Hills, wind conditions and rider's momentum are all controlled. An eddy current brake adjusts the difficulty of the ride based on the microprocessor information. Users can ride on famous bike courses via the monitor, or create their own custom courses, or even have computer-generated random courses. The Racer-Mate Challenge cartridge allows users to create timed-trial training sessions and compete against their own past performances.



Quick Brown Box Battery-backed 64K RAM

Brown Boxes, Inc.
$129.00

This cartridge has the capability of saving an entire series or ''box'' of programs in one operation. The series is saved as one long sequential file and is easily retrievable as an entire unit. The lithium 3-volt battery is expected to last from 7–10 years. Utilities include a loader program, an auto-boot program, a separate manager program for either the 64 or the 128, a check-sum program, and a cartridge checker program. The excellent manual is very detailed and accurate.

WarpSpeed

Cinemaware Corporation
$49.95

This fast load utility cartridge includes a DOS wedge, a sector-editor, a machine language monitor/assembler, file utilities, and drive re-numbering capabilities. When used with a Commodore 64/1571 disk drive setup, disks can be formatted and saved to without flipping the disk in the drive. A whopping 1328 blocks of storage possible without this flipping procedure. Commercial software with ''normal'' copy protection will load about four times faster.



IconTroller

Suncom
$19.95

This keyboard-mounted joystick is designed especially for the GEOS-based system and mounts directly to the keyboard surface. Its easy accessibility provides a more reliable input than a mouse, and it's not as bulky as a normal sized joystick.

Non-volatile Memory Cartridge

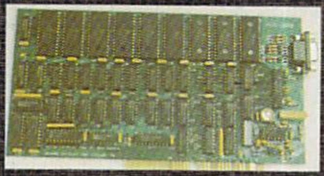
Scinort Micro
$24.95

This 8K, static RAM memory cartridge uses standard two-year AA carbon-zinc batteries. Any data loaded into the cartridge can, therefore, remain in the RAM for up to two years. The cartridge itself allows instant screen or function changes, or users can make instant changes to the BASIC interpreter or KERNAL. Storing BASIC or machine language programs for easy call-up in a manual mode is also available. In addition, linking a set of programs for any language or application is a part of the versatility of this cartridge.

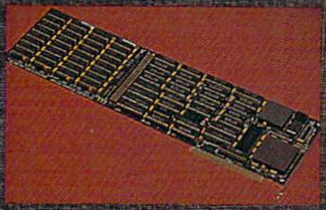
Amiga

Hardware

by Dan Schein



FlickerFixer
MicroWay
$595.00
FlickerFixer is a de-interlacer card for Amiga 2000. When used with a multisync monitor, this board provides a workstation-quality display that rivals VGA or the Mac II.



PC-Elevator 386
Applied Reasoning Corp.
$1795.00
PC-Elevator is an MS-DOS accelerator card that is compatible with the A2000 Bridgeboard. It turns your 4.77 MHz 8088-based Bridgeboard into a 16 MHz 80386-based power house.

GOMF Button
Hypertek/Silicon Springs
$69.95
GOMF Button is an extension of the very popular GOMF (''Get Outta My Face'') program. GOMF can help you catch GURUs and recover rather than crash. With the addition of the GOMF Button you can now save your data after a crash.

PRD-44
Pioneer Computing
$999.99
PRD-44 is a 44MB removable cartridge winchester disk drive for the Amiga line of computers. It offers unlimited off-line storage and 25-millisecond access time. Requires SCSI interface.

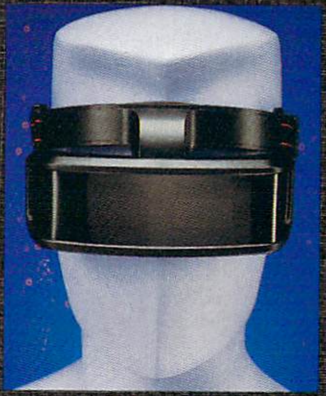


Perfect Vision
SunRize Industries
$249.95
Perfect Vision is a real-time video digitizer for all three models of the Amiga. It can capture black and white or color and supports 320 × 200 and 320 × 400 modes. Black and white images can be captured in 1/60 of a second.

Bus Expander
Bill's Boards
$495.00
The Bus Expander lets you expand the Amiga 500 or 1000 to use most of the 2000's expansion cards. Hard disk controllers, RAM expansion and even the A2028 Bridgeboard can be used.

Impact A500-HD/RAM
Great Valley Products
$995 (0K RAM)
Impact A500-HD/RAM is a one-piece unit that connects to the 500. It adds a 20MB hard drive, 2MB of auto-configuring expansion RAM, and a SCSI controller.

Processor Accelerator
Creative Microsystems, Inc.
$199.99
Processor Accelerator is a speed-up board for the Amiga that offers speed above the MC68010. It also includes a math co-processor socket that when filled, will offer even more increased speed.



X-Specs 3D
Haitex Resources
$124.95
X-Specs 3D uses shuttered LCDs synchronized to produce a realistic 3D image. With these glasses you will enter a world of 3D like you never thought possible. Look for commercial products that can use these glasses in '89.

64/128

Education Software

by Howard Millman



The Pond
(Ages 4-12) Sunburst Communications
$65.00

Using the strategy of directing a frog to follow a successive lily pad path, *The Pond* subtly strengthens a child's ability to recognize elementary patterns. Offering six levels of difficulty, *The Pond* deftly employs above-average graphics to both inform and reward students.



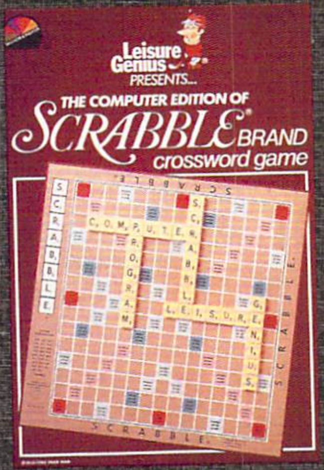
Easy as ABC
(Ages 3-5) Springboard Software
$39.95

Built around animals and space travel, *Easy as ABC*'s five games emphasize alphabet-sequencing skills and letter recognition. Pleasantly paced and well implemented, this easy-to-use primer for non and early-readers requires only minimal adult supervision.



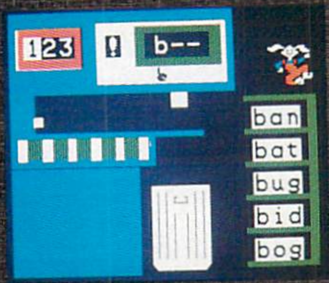
Astro Grover
(Ages 3-7) Hi Tech Expressions
$9.95

Grover, of Sesame Street fame, hosts some friendly visitors from the outer limits. These Zips, it seems, were born to be counted, added and subtracted. In all five games, correct answers are rewarded by eye-catching graphics and almost mesmerizing sound effects.



Scrabble Crossword Game
(Ages 8-Adult) Electronic Arts
$32.95

A skillful translation of the classic word game from board to screen. Just as challenging as the original, it now offers the added attraction of solitary Scrabble (warning: the computer's a resourceful adversary) plus the convenience of checking entries with the built-in 20,000-word dictionary.



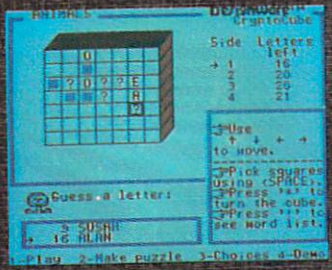
Reader Rabbit
(Ages 4-8) The Learning Company
$39.95

Comprised of four fast-moving and diverse games, *Reader Rabbit* stresses primary spelling skills as well as object/word recognition. One of the best in the genre, *Reader Rabbit* treats errors lightly. Rewards, in the form of playful animated sequences, are ample.



Teddy Bear-rels of Fun
(Ages 4-12) DLM Software
$39.95

By combining teddy bears with props, backgrounds and user-written captions, children of all ages can create oversized posters, page-sized pictures and labels. This printer utility's two disks provide hundreds of bright ready-drawn graphics to produce personalized cartoon art.



Crypto Cube
(Ages 8-Adult) Britannica Software
$9.95

The *Crypto Cube*'s Wuzzle emcees this crossword-like game. Players fill in the blank boxes to uncover the puzzle's twenty hidden theme words on the *Crypto Cube*'s four sides. The answer words are drawn from one of 50 user-chosen categories.

Amiga

Education Software

by Gary V. Fields

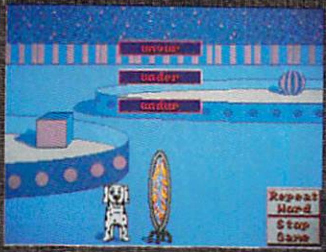
IntelliType
Electronic Arts
$49.95

Using artificial intelligence, this typing tutorial monitors and helps you correct typing errors. Because each typing lesson is the continuing episode of a cliff-hanger novel, you'll want to continue your studies just to see how the story ends.



Robot Readers
Hilton Android Corporation
$29.95 (each)

A series of talking, illustrated story books for young children. The mixture of graphics, speech and the ability to point at words and have them spoken makes this series perfect for early readers.



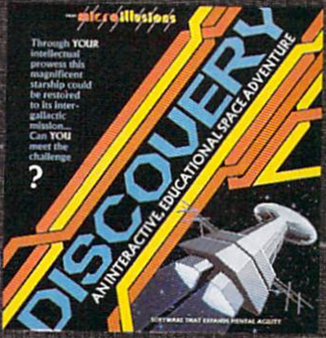
Spellbound
Learners Image
$39.95

Using a delightful mixture of digitized speech, animation and music, this spelling program makes learning word lists fun. Best of all the parent or teacher can create completely new word lists for the child to learn.



Galileo 2.0
Infinity Software
$99.95

Version 2.0 includes a database of 1600 stars and lets you track the planets and stars from any point on earth. You can also view the stars on any day and hour from 400 years forward or backward in time.



Discovery Series
MicroIllusions
$39.95 (main program disk)
$19.95 (each expansion disk)

Child learns about math, geography, history, language, etc. while exploring an alien spaceship. This one mixes learning with child-pleasing fun.

Kinderama
Unicorn Educational Software
$49.95

The program disk contains five delightful skill games all of which involve robots for children from preschool to age six. Children (and parents) will enjoy the sound, graphics and animation that help the child learn to count, add, subtract and follow directions. This is just one of a series of quality educational games by the same company.



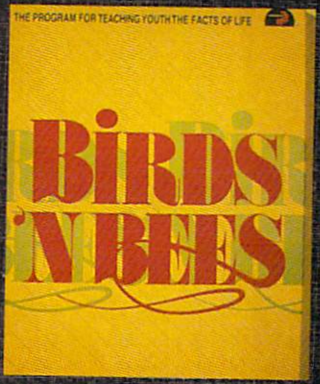
Space Math
Intracorp Inc.
$14.95

Mixing the graphics and challenge of an arcade game, this one will have your children adding, subtracting, dividing and multiplying at warp speed or crashing in the attempt. Play requires the child to maneuver a spaceship by correctly answering math questions. The game uses multiple screens which increase in difficulty, so the child is always challenged.



Great States II
Designing Minds, Inc.
$39.95 (each)

Learn about America's geography, including topography and information about individual states like state flower, song, average rainfall, etc. It includes a competitive game which lets you race across the country you are learning about.



Birds 'N Bees
Intracorp Inc.
$14.95

This text-only program deals with human sexuality in a straightforward, sensible, understandable and informative manner. What and how much information it supplies the child is determined by his or her age and gender. The program includes password protection, so a teacher or parent can control the level of information available to the user.



Linkword Language Series
Artworx Software Company
$29.95 (each)

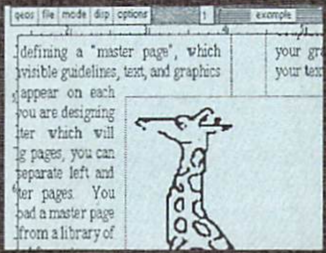
Don't look for great graphics or sound effects here, but each program in this series is a serious foreign language tutorial. The series teaches French, Spanish, Dutch, Russian, etc. and each comes with an audio tape to insure you learn the language's correct pronunciation.

Productivity Software

by Gary V. Fields

Paperclip III
Batteries Included/Electronic Arts
$49.95

This classic combination word processor/ terminal program just keeps getting better. This professional tool has every feature a serious writer needs including a fast spell check, plus it comes with both the 64 and 128 version of the program (so if you move up to a 128 you can take it with you). Not copy protected.



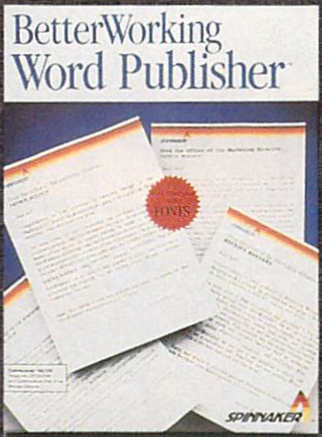
geoPublish
Berkeley Softworks
$69.95

For GEOS users there is no better desktop publishing program on the market. It lets you mix and edit text, fonts, graphics and boxes and supports laser printers.



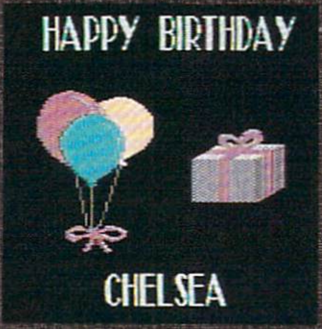
Paperclip Publisher
Gold Disk/Electronic Arts
$49.95

This is the 64 version of an award-winning Amiga desktop publishing program. The program's intuitive design includes pull-down menus, point-and-click commands and built-in text and graphic editors. It works best with a mouse.



BetterWorking Word Publisher
Spinnaker Software Corp.
$39.95

A fast GEOS-environment word processor which lets you mix graphics and text. The print-to-screen option lets you view your documents exactly as they will print, plus it has a 100,000-word spell checker.



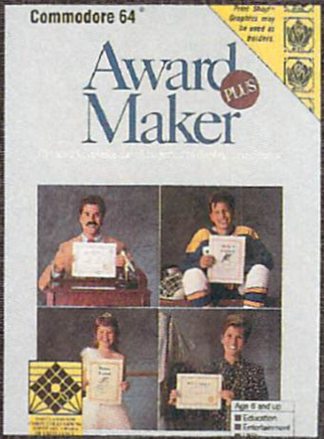
Home Video Producer
Epyx
$49.95

Lets the novice create, animate and record titles or screen sequences on their video recorder. Perfect for weddings, home videos or business presentations.



Postcards
Activision
$24.95

This one lets you create unique postcards complete with your own brand of humor. *Postcards* is sure to brighten the day of not only the friends who receive cards, but also the mail carrier who delivers them.



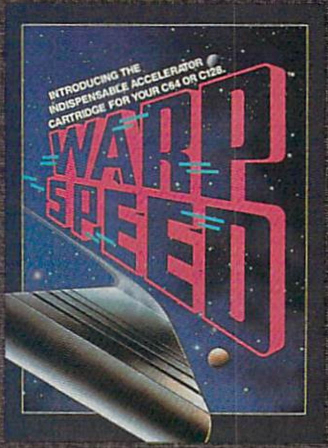
Award Maker
Baudville
$39.95

This one makes it easy to whip out an award or certificate for those special people in your life. Comes with hundreds of templates for business, home and school use. The program is not copy protected.

by Mark Jordan

C128 Developer's Package
Commodore Business Machines, Inc.
$50.00

This package, produced by Commodore, has not only a powerful macro assembler, but also a nifty screen editor (better than what comes in the 128!), and lots of programmer's utilities like fast loaders, mouse drivers and math routines.



WarpSpeed cartridge
Cinemaware
$49.95

Finally a cartridge that works equally well in both 64 and 128 modes with multiple drives. It's very fast and feature-laden.

geoWrite Workshop 128
Berkeley Softworks
$69.95

A much-improved word processor for the 128 mode of GEOS which will incorporate graphics from *geoPaint* and do overlay files for multiple columns. As with all GEOS products, fonts are its glory. It includes a simple merge program.

Amiga

Productivity Software

by Gary V. Fields



excellence!
Micro-Systems Software
$300.00

This one looks like a cross between *WordPerfect* and *ProWrite*. This expanded word processor comes very close to desktop publishing. It comes with a thesaurus, spell and grammar checker and also supports PostScript printers.



Library
WordPerfect Corporation
$129.00

This one disk has nearly every office productivity program you should ever need including a electronic calendar (with appointment schedule and alarm clock), financial calculator, notebook (data manager), DOS utility and program editor. The calendar's clock can be set to alert you to appointments as far as six months in advance.



Professional Page
Gold Disk
$395.00

When it comes to professional desktop publishing, this one does it all—including color separations. Intuitively designed it is easy to use, yet has all the power of any publishing program now on the market. The program is not copy protected and can be installed on a hard drive.



Superbase Professional
Precision Software
$299.99

This is a rational, programmable, intuitively-designed data management program which is powerful yet relatively easy to use. It comes with a tutorial-type manual, sample files and a forms editor for designing invoices, statements, purchase order forms or any other type of forms to complement the data you store with the main program.

PHASAR Home Accounting
Antic Publishing Inc.
$89.95

An excellent home/small business accounting program which uses a single-entry accounting system. The program can split a single transaction between different categories, making it much easier to keep track of income and expenses.



The Accountant
KFS Software, Inc.
$299.50

A business-powered double-entry accounting system that includes payroll, accounts receivable and payable, a general journal, multiple-check register, and help screens. The program is not copy protected and can be installed on a hard drive.



DeluxeProductions
Associated Computer Services/ Electronic Arts
$199.95

For business or educational video presentations this one package is all you need. The program allows you to design sophisticated storyboards and animated scenes which include stereo sound effects. Production is mouse controlled; you can include wipes, fades, scatter effects and overscan displays. The four program disks are not copy protected and can be installed on a hard drive.

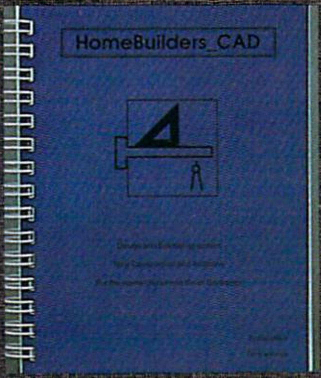
Dr. Term Professional
Progressive Peripherals & Software
$99.95

A powerful terminal program which includes a 300-entry phone book, script language, mini-BBS and supports most protocols including X, Y and WX modem. Comes with an extensive, informative manual.



Outline! Idea Processor
PAR Software, Inc.
$49.95

This program lets you organize your thoughts on paper (screen) using an outline template. Using many word processing tools (cut, paste, search) this one is perfect for collecting, arranging and editing ideas.



HomeBuilders CAD
EaseWare
$199.00

Yes, you can design your house or office with this one, but beyond that, it will estimate how much material each project will require, as well as how much it will cost. Includes options to print out information as well as designs.

Graphics Programs & Aids

by Scott A. May



Paperclip Publisher
Gold Disk/Electronic Arts
$49.95

By far the most versatile and user-friendly desktop publisher yet available for the 64. Includes three terrific conversion programs for translating text, fonts and clip art from nearly every source imaginable. A definite must-have.

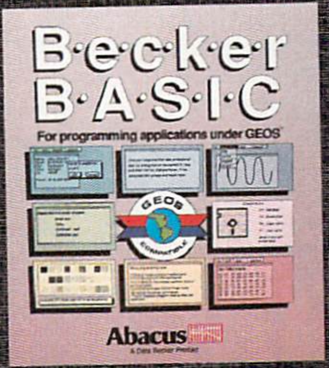


Home Video Producer
Epyx
$49.95

Personalize your home videos with elaborate title screens, intermissions and closing credits. Includes 75 pre-made graphics, ten fonts and enough special effects to make Spielberg jealous. Highly professional.

Outrageous Pages
Batteries Included/Electronic Arts
$49.95

Although dropped by EA soon after its release, this powerful graphics program is still widely available and worth checking out. Features a wonderful instruction manual, 50 fonts, clip art, borders and nine pre-designed page templates.



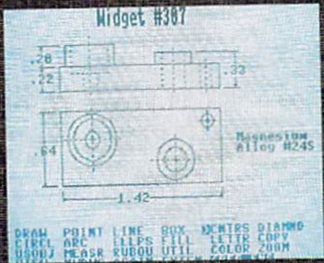
Becker BASIC
Abacus Software
$49.95

Not strictly a graphics program, yet featuring an incredible array of hi-res drawing commands. Used within the context of GEOS, its potential is unlimited.



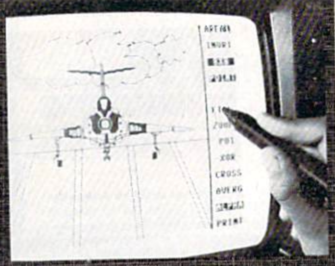
Advanced OCP Art Studio
Rainbird
$29.95

By far the best painting program available for the 64. This one breezes through high-tech utilities most graphic programs haven't even dreamt of yet.



CADpack 128
Abacus Software
$59.95

A real marvel, even if only in 40 columns. Highlights include a well-written manual, user-friendly command structure, and 1531 mouse input. Highly professional.



Flexidraw 5.5
Inkwell Systems
$34.95

Professional-quality graphics program supports multiple input devices, notably Inkwell's excellent line of light pens. Functions galore for both serious programmers and casual doodlers. Great fun.



The Sesame Street Crayon
Polarware/Penguin Software
$14.95 each

Early childhood software at its very best. A series of three fun computer coloring books that teach numbers, the alphabet and relational concepts. Dozens of pictures on each disk with excellent printer support.

Graphics Programs & Aids

by Bob Lindstrom



Photon Paint
Microllusions
$99.95

In addition to a full array of standard (and not-so-standard) drawing tools, *Photon Paint* provides full Hold and Modify (HAM) support. Its logical mouse/menu interface proves that the Amiga's 4096-color HAM mode can be just as useful as 16- and 32-color graphics.



DeluxePhotoLab
Electronic Arts
$199.95

The digital photography of the future is here today. This one-stop program does it all—drawing (including HAM mode), color processing and poster printing. Whether you want to sketch in low-res, add subtle shades to a HAM graphic, or print a 10-foot square poster, *DeluxePhotoLab* handles the job.



Express Paint V. 2.0
PAR Software Inc.
$99.95

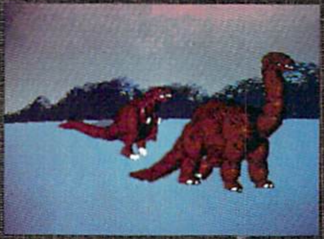
Designer Stephen Vermeulen shows there are new paint features after *DeluxePaint II*. His *Express Paint* offers new ways to juggle pixels by combining paint and desktop publishing in one package. Plus, *Express Paint* gives access to the Amiga's little-used, 64-color half-brite mode.

Invision
Elan Design
$129.00

Invision allows you to interact with video from a VCR or A-Squared's Live! digitizer. Invision is best described as a real-time special effects system that allows you to mix images from paint programs and add effects like mosaic, strobe and mirror.

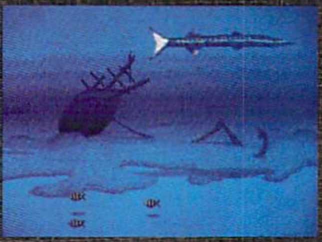
Turbo Silver V 3.0
Impulse, Inc.
$199.95

The visually stunning (simulated) reality of ray-tracing brightened Amiga screens this year in several rendering programs. *Silver* made its mark in a competitive field by blending a logical user interface with animation capabilities.



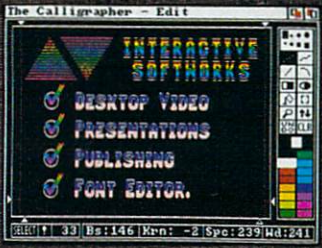
Animation: Apprentice
Hash Enterprises
$299.00

This program is the flagship of several pace-setting animation tools from creator Martin Hash. *Animation: Apprentice* microcomputerizes the art of Disney-style animation and allows you to ingeniously interchange characters, body parts and movement patterns.



Animation: Stand
Hash Enterprises
$49.95

How much movement can you get out of a static IFF graphic? If you're using *Animation: Stand*, the answer is "lots." This software simulation of an Oxberry Animation Stand permits you to scan, zoom and pan across the surface of a still graphic. Then, the resulting animated sequence is saved to disk.



Calligrapher 2.0
InterActive Softworks
$129.95

Multi-colored Amiga fonts were invented by *Calligrapher*, and Amy alphabets have never been the same. The latest version offers more power and flexibility to create customized alpha-numeric character sets, complete with color cycling. *Calligrapher* brings beauty and imagination to Amiga text displays.



InterChange
Syndesis
$49.95

From *Videoscape 3D* to *Sculpt 3D*, the varied data standards in Amiga ray-tracing created a visual Tower of Babel. Amiga maven John Foust brought order to chaos with *Interchange*, an ingenious program that swaps data between programs. ▣

Amiga

Music Software

by Bob Lindstrom



Dr. T's Keyboard Controlled Sequencer (KCS) V1.6

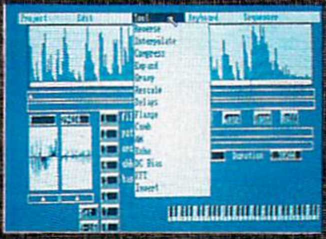
Dr. T's Music Software
$249.00

With the arrival of *Dr. T's KCS*, the Amiga receives an industry standard in MIDI music making. This professional-quality sequencer establishes the Amiga's first-rate potential as a MIDI-controlling computer.

Sound Oasis

New Wave Software
$99.95

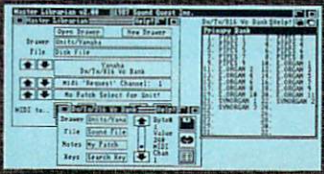
An ingenious program, *Sound Oasis* places Amiga owners into the wide world of Ensoniq digital sampling. Just stick a Mirage disk into the Amiga, and the program will convert it to an IFF format instrument. It's almost like putting a $2000 Mirage sampler inside your Amiga.



Studio Magic

SunRize Industries
$99.95

MIDI and sampling at bargain rates—*Studio Magic* includes a basic MIDI recorder and sound sampling/editing software. With the addition of an under-$200 MIDI keyboard and interface, you have an instant MIDI studio.



Patch Editors/Librarians

Sound Quest, Inc.
$150.00

The Amiga maestros at Sound Quest took a relatively generic application and thoroughly "Amigatized" it. Their programs to design synthesizer sounds include windowing, multitasking capability and ingenious random voice generation tools. Sound Quest Editor/Librarians support synthesizers from Yamaha, Roland, Korg and others.

Synthia

The Other Guys
$99.99

Wish you could afford those expensive synthesizers? Buy *Synthia*. This comprehensive software tool emulates five different synthesizers from a percussion synthesizer to a complex additive synthesizer. The results are saved as IFF instruments for use in other Amiga music programs. *Synthia* takes the Amiga's internal sounds to the max.



The Quest 1: Texture

Sound Quest, Inc.
$150.00

High powered but inaccessible for Amiga musicians unless they owned the pricey Roland MPU-401 MIDI interface, Roger Powell's *Texture* was a great MIDI sequencer that didn't quite catch on. The new, revised version, however, does away with the Roland interface and supports standard Amiga MIDI ports.



MIDI Recording Studio

Dr. T's Music Software
$69.00

An eight-track entry-level MIDI recorder that brings Dr. T's quality to beginners who don't need the muscle or the sometimes steep learning curve of the full-fledged KCS. Also supports the four internal Amiga voices.

64/128
Amiga

War Games

by Russ Ceccola

Rommel: Battles for North Africa
Strategic Studies Group, Inc. (SSG)/ Electronic Arts
$39.95
Yet another game from SSG that uses the excellent Battlefront Game System with its easy-to-use multiple menus. Includes maps, menu cards and Warplan and Warpaint game adjustment programs. Allows you to play interesting scenarios in the role of Rommel during his famous battles.

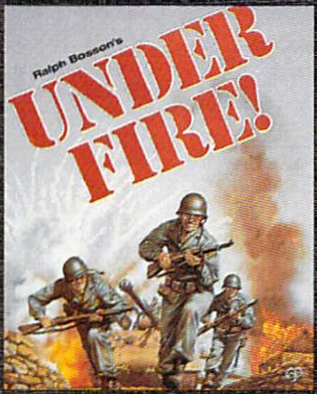


The Hunt for Red October
DataSoft
$39.95
Great adaptation of best-selling book by Tom Clancy with great graphics and sounds. Uses unique game system of icons and menus that makes planning strategy and playing the game so much easier than expected.

Patton vs. Rommel
Electronic Arts
$29.95
Allows choice of either leader in simulation of Battle of Normandy that features detailed graphics and icon-driven system. Easy to play, yet tough to fully develop good strategy; game also features a construction set.



Napoleon in Russia: Borodino 1812
Krentek Software/DataSoft
$24.95
Features historically accurate battle map, various skill levels and multiple-player option to satisfy the Napoleon enthusiast. Offers possibility to change history in this important battle of Napoleon's military career.



Under Fire!
The Avalon Hill Game Company
$34.95
WWII simulation allows you to choose side of Russians, Germans or Americans in various scenarios. Ease of play made better by atmospheric packaging, easy-to-understand manual, colorful maps and construction set to make your own maps for use with the game.

by Steve King



Empire
Interstel
$49.95
An addictive war game simulation where strategy and advance planning control the outcome. It's a fast-moving game where speed of play compensates for lack of detailed battle realism.



F/A-18 Interceptor
Electronic Arts
$49.95
This game was designed and programmed specifically for the Amiga. Its detailed graphics and smooth movement, combined with simple aircraft operation, make it exciting and enjoyable.



Universal Military Simulator
Rainbird
$49.95
UMS, has a 3D mapboard that is contoured and can be viewed from multiple angles and distances. Comes with several historical battles, but players can create their own scenarios.

64/128

Head-to-Head Games

by Gary V. Fields



Street Sports Basketball
Epyx
$39.95

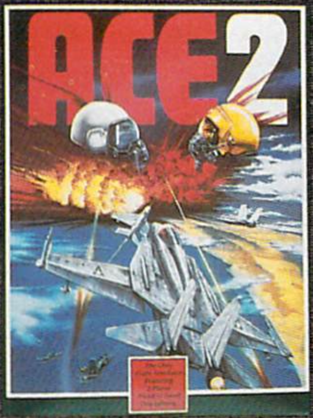
Each player recruits his or her basketball team from neighborhood kids and then competes on four different outdoor courts. This game lets you make all the moves a real basketball player could. Best of all, you are always the player with the ball.

Roadwars
Arcadia/Electronic Arts
$29.95

This arcade/combat challenge lets you play with or against another player (human or computer). You command a rolling war sphere down a dangerous strip of space. The dilemma: to win you must knock off your opponent—but to survive you need his/her help.

Patton vs. Rommel
Electronic Arts
$39.95

Assume the role of either George Patton or Marshal Rommel in this WWII war game. The game board is well designed, issuing commands is simple, and the competition is exciting. If you get caught in a tight spot, you can even request advice from either of the generals.



Ace 2
Spinnaker Software Corp.
$29.95

You can either dogfight with another human or the computer. The action is realistic and fast, and you must cope with not only the other pilot but land and sea forces as well.



Star Rank Boxing II
Gamestar/Activision
$29.95

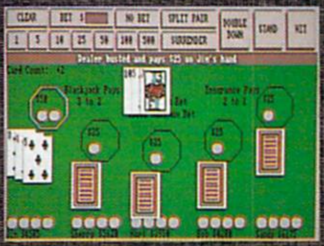
An improved version of the original game, this one lets you build, trade and manage up to five boxers as they battle for the world title. Best of all, the game (which includes welter, middle and heavy weight divisions), is smooth and fast.

Napoleon in Russia: Borodino 1812
Krentek Software/DataSoft
$59.95

This simulation of the battle of Borodino during Napoleon's invasion of Russia lets you compete against the computer or another human. The game includes eight historical and "what if" scenarios and complexity levels, so you shouldn't get bored with this one too quickly. You can save games in process.

Earth Orbit Stations (EOS)
Electronic Arts
$34.95

This combination skill and strategy game lets up to four people compete for the conquest of space. You must raise money, construct space stations and explore planets. The game contains seven different scenarios which can take from two to 40 hours to complete.



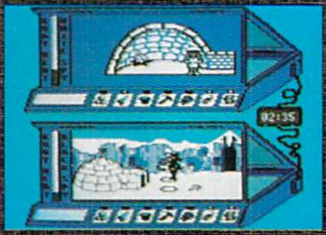
BlackJack Academy
MicroIllusions
$39.95

Up to five players can play Blackjack, lose up to $9999 electronic dollars and still go home with the grocery money. The game includes multiple table rules like Las Vegas and Atlantic City as well as an option to save a game in progress.



Sporting News Baseball
Epyx
$39.95

The computer versions of "America's Game" keep getting better. This one combines realistic arcade action with a four-window playing view and the ability to keep stats on individual players. Plus you can bunt and steal.



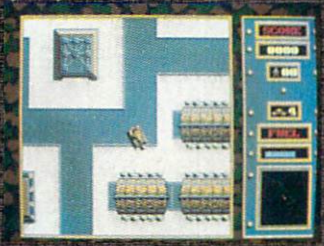
Arctic Antics III
Epyx
$24.95

Straight from the pages of *MAD* magazine, the two characters from Spy vs. Spy bring a challenge and a lot of laughs to the 64. Don't pass this one by just because it may appear childish—it's a great game.

Amiga

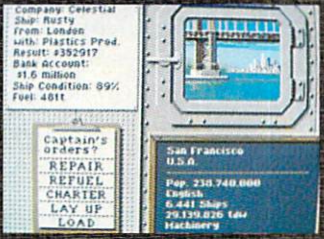
Head-to-Head Games

by Gary V. Fields



Fire Power
Microllusions
$24.95

This explosive tank game lets you battle the computer, another human or across telephone wire via modem. The action is fast, the graphics beautiful, and the size and complexity of the battlefield wonderful. If you enjoy good arcade or war games, this is a "must have" game.



Ports Of Call
Aegis Development
$49.95

You either make a fortune or go down with your ship in this combination finance and strategy game where you play the part of the owner/captain of a fleet of tramp steamers. The mixture of beautiful screens, digitized sounds and real-time challenge makes this one addictive.



Earl Weaver Baseball
Electronic Arts
$49.95

If you can't afford your own baseball team and ball park, this is the next best thing. It combines realistic baseball action and strategy, instant replay, digitized sounds and great graphics. Plus you can not only draft your own dream team, you can even design your ball park using the construction set included.



Stellar Conflict
PAR Software, Inc.
$39.95

This conquer-the-heavens strategy game lets one to four humans (and/or the computer) compete with each other as they explore, capture and control planets. To win you must manage your resources and know when and where to do battle.



Ebonstar
Microlllusions
$39.95

This space/arcade challenge has you battling not only your human opponent and mechanical (computer-controlled) adversaries, but also a bottomless "black hole." If you're looking for a real challenge, this one has it—it is tough.



TeleWar
Software Terminal
$39.95

This one lets you go to war over telephone wires via a modem. Actually you can do battle with a friend on the same computer, but the real fun is with the game's telecommunication software. The game pieces include artillery, tanks, trucks, planes, etc., and it comes with a selection of different battlefields.

Roadwars
Arcadia/Electronic Arts
$34.99

This arcade/combat challenge lets you play with or against another player (human or computer). You command a rolling war sphere down a dangerous strip of space. The dilemma: do you cooperate with the other player in order to survive or do you attack them to win, and when do you change alliances?



Flight Simulator II
SubLogic Corp.
$49.95

What gives this tried and true flight simulator such appeal is that you can fly wing to wing with another player via modem. Everyone knows how good SubLogic's flight simulators are, but with this one you can show another player your stunts while he witnesses yours. This is about as close to team flying as you'll get without doing something very dangerous.

Adventure/Fantasy Games

by Shay Addams



Advanced Dungeons and Dragons: Pool of Radiance
Strategic Simulations, Inc.
$39.95

Pool of Radiance features the best animation I've seen in an SSI game. It looks sharp, plays smoothly and has an adventurer-friendly interface. First-person graphics, the kind seen in *Bard's Tale*, are employed in town and dungeon scenes. Spot animation brings characters and monsters to life.

Wasteland
Interplay/Electronic Arts
$39.95

Wasteland puts you in charge of seven Desert Rangers out to solve the Servants of the Mushroom Cloud, a "glow in the dark" cult whose temple is a former nuclear reactor in Las Vegas. I like the way the skills and character development are handled, and the story is original—more than just another "after the bomb" scenario.



Bard's Tale III
Interplay/Electronic Arts
$39.95

Seems the Mad God, Tarjan, has leveled the town of Skara Brae, so you'll travel through nine dimensions in time and space to seek him out. For the first time you can "use" objects; this leads to more emphasis on the puzzles than in previous releases in the series.



Beyond Zork (128 only)
Infocom
$44.95

The first official sequel to the *Zork* trilogy. In addition to Brian Moriarty's fine prose and subtle puzzles, *Beyond Zork* contains many role-playing elements. A plethora of time-saving features have also been added.



Might and Magic
New World Computing/Mediagenic
$39.95

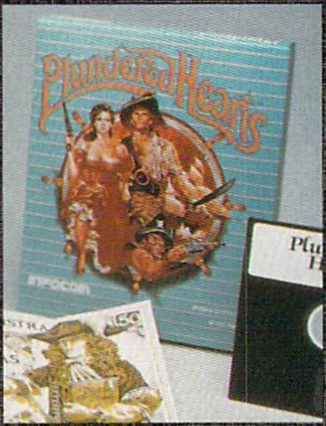
In his "fantasy role-playing simulation" your party of six utilizes combat and spell-casting capabilities to move through *M&M*'s extensive geography. Mapping sheets are included to make exploring easier.

Alternate Reality: The City
DataSoft/Electronic Arts
$39.95

In this fantasy role-playing game you are abducted by an alien spaceship sometime in the future and left in a room with a single exit. You pass through the exit to the City of Xebec's Demise and, making the most of your stamina, charm, strength and wisdom, surreptitiously begin to explore *The City*.

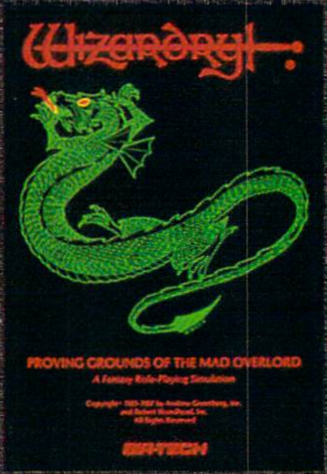
Jinxter
Magnetic Scrolls/Rainbird
$34.95

In *Jinxter* you are seeking a set of charms once attached to the magical Bracelet of Turani, so you can put it back together. You'll find plenty of laughs while seeking the charms, for the droll British sense of humor crops up in the most unexpected places.



Plundered Hearts
Infocom
$34.95

The first Infocom game in which you *must* play the role of a woman. *Hearts* is patterned in the style of a romantic novel, but is packed with the kind of logic puzzlers that have kept Infocom gamers racking their brains.



Wizardry I
Sir-Tech Software
$39.95

It's a ten-level maze in which you strive to stay the evil wizard Werdna and recover an amulet stolen from Trebnor, the Mad Overlord. Character development is an important and well-designed part of the game.

Amiga

Adventure/Fantasy Games



Paladin
Omnitrend
$39.95

A fantasy game that uses the *Breach* system of tile graphics, but adds teleports, magic and a wide assortment of weapons and artifacts. Up to ten party members accompany you on the various quests. The long-range goal is to achieve knighthood for your main character.



Moebius
Origin Systems/Broderbund
$59.95

Moebius takes place in an Oriental fantasy world and combines a highly original magic system with action-packed kung fu and sword-fighting sequences. The mouse and icon interface is outstanding.

Beyond Zork
Infocom
$49.95

The first Infocom game that will actually let you fight grues! Not only that but you have role-playing attributes like armor class and dexterity instead of just a score. There are countless monsters to fight, spells to cast, stores to shop in, plus color, auto-mapping and an Undo feature.



Leisure Suit Larry
Sierra Online/Electronic Arts
$39.95

Leisure Suit Larry puts you in the role of Larry Laffer, a loser of a guy with a very important goal. Larry is 40 years old and single and is desperately searching for beautiful girls in the mythical gambling mecca of Lost Wages. Adult subject matter.



Faery Tale Adventure
Microlllusions
$49.95

Faery Tale is a one-character role-playing game with a twist. You begin as one of three brothers who must defeat an evil necromancer and recover a magic talisman in order to save the medieval land of Holm. After being killed four times, you begin anew as another brother. It's not just another play-alike whose author was content to emulate the style of *Ultima* or *Wizardry*.

Jinxter
Magnetic Scrols/Rainbird
$39.95

The Amiga version lets you make many common decisions with the mouse and pull-down menus. The parser is top-notch, accepting full and complex sentences.

Questron II
Strategic Simulations/Electronic Arts
$49.95

Questron II sends you back through time to prevent the Evil Book of Magic (from the first game) from being created. Automapping complements *Questron*'s familiar and convenient interface.



Uninvited
Icon Simulations/Mindscape
$49.95

Graphic icon-driven adventure using the same user interface as *Deja Vu*. An old, spooky house is your only place of refuge after you are involved in a car crash.

Arcade Games

by Mark Cotone



The Last Ninja
Activision
$24.99
A beautiful martial arts contest that adds a high level of strategic depth by incorporating puzzles, magic and weapons. The graphics here are so stunning that if we were handing out awards for Best Set Design, this game could claim those honors as well. Great arcade kicks.

Mini Golf
Capcom
$24.99
All the thrills of the carpet-putting classic are here, including multi-tiered greens, metallic loops, unpredictable bumper boards and moving obstacles. Precise club control makes this a game of patience, timing and skill. But a little luck wouldn't hurt either. Join the club.



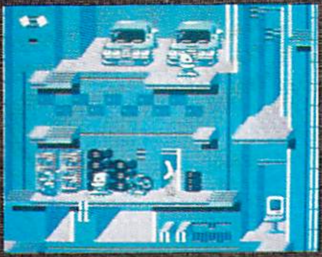
Skate or Die
Electronic Arts
$29.95
A sometimes violent, often hilarious tour through five different events in the world of sidewalk surfing. Dazzling graphics, smooth animation and exacting joystick control make this a most thrilling ride.



Force 7
DataSoft
$19.95
It's you and your special crack combat unit against a mob of aliens in a distant space factory. You have seven soldiers, they have several hundred. Good luck! Fast-paced shootout with plenty of strategic possibilities.

Road Runner
Mindscape
$39.95
Beep! Beep! Look out, the classic Road Runner/Coyote chase moves out of the cartoons and onto your monitor. A variety of screens present a host of challenges laced with all of those humorous animal antics we know so well. Tough, but well worth the fight.

Demon Stalkers
Micro Forte/Electronic Arts
$29.99
Battle evil-doers and demonic creatures as you plunge through level after level of infested maze-like dungeons. A touch better than *Gauntlet* (its obvious inspiration), because this package also includes an easy-to-use dungeon construction option.



Impossible Mission 2
Epyx
$29.95
Here's a rarity: a sequel as good as its highly successful original. Once again you're out to thwart the evil doings of the mad scientist, Elvin. The search will take you through 50 rooms swarming with suicidal robots and dastardly traps. Impossible? Maybe. Irresistible? Definitely!

Rockford—The Arcade Game
Arcadia/Electronic Arts
$19.99
The world-famous Boulder Dasher is back (again!?), this time offering quite a bit more than in any of his earlier visits. You now must explore and mine five new worlds comprised of 80 different play fields. Wow! New puzzles, humorous intermissions and catchy music make this an arcader's tunnel of love.



GeeBee Air Rally
Activision
$19.99
Take to the skies as you race against the clock and other pilots in a wild 3D flight complete with stomach-churning turns, open throttle maneuvers and hard-edged competition. Pass the Dramamine, please.



Battle Droidz
DataSoft
$19.99
A *Marble Madness* variant that takes the challenge one step further. Not only must you maneuver through multi-level play fields while avoiding the computer-controlled nasties, but now you are equipped with your own offensive weapons, like Immobilizers, Bombs and Guns. Attractive and addictive.

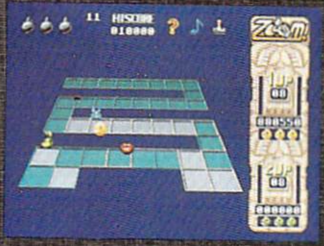


Cauldron
Broderbund
$29.99
A pair of offbeat contests that will have you glued to your Commodore. Set in a mystical land of witches and sorcerers, these challenges draw attention due to their unique styles of surrogate movement: broomstick flying and bouncing. One of this year's toughest, yet more rewarding arcade matches.

Amiga

Arcade Games

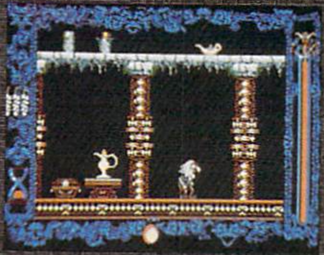
by Russ Ceccola



Zoom!
Discovery Software International
$29.95
Most original game to come out for a long time that features colorful characters, great animation and strategy. Addictive game that should earn a place in an arcade game Hall of Fame.



Obliterator
Psygnosis
$39.95
Action-packed imported game puts you in role of a defender against creatures and robots of all types. Fast-paced game has unique graphical representation and digitized sounds as you blow the enemy away.



Vampire's Empire
DigiTek, Inc.
$44.95
Incredible graphics highlight this quest to find and kill Count Dracula by using all sorts of objects you find along the way. Neat atmosphere sets you up for a lot of action, thrills and chills in this horror spoof game.



Fire & Forget
Titus Software
$39.95
Operate a destruction vehicle in a world on the brink of disaster in the nuclear age. See your enemies from a first-person perspective, as the great graphics and sound surround you in this game.

Aaargh!
Arcadia/Electronic Arts
$34.95
Amazing graphics and sounds make for a great atmosphere to take on the role of one of two legendary Hollywood movie monsters. Trample one of 12 cities as you search for the Golden Dragon's Egg.

Every year we ask our reviewers to pick the best products released during the current year. Since we start this process in August, our reviewers sometimes choose titles that they anticipate will be the best (if they ever come out). So every year one or two nominees slip by that have not yet been released by our publication date.

To give our judges an outlet for this eager anticipation of titles to come, this year we've also asked them to pick the title(s) they think most likely to make next year's list. So without further ado, here's the . . .

Best of 1989?

64/128 Hardware
X-SPECS 3D
Haitex Resources, Inc.
Computing Experimental
Fischer America Inc.

Amiga Education Software
The Planetarium
Microlllusions

128 Productivity Software
Page Illustrator/Page Builder 128
Patech Software

64/128 Graphics Programs
Page Illustrator/Page Builder 128
Patech Software

Amiga War Games
Heavy Metal Modern Land Combat
Access Software
F-19 Stealth Fighter
Micro Prose

Amiga Head-to-Head Games
The Universal Military Simulator
Rainbird

64/128 Adventure Games
Ultima V
Origin Systems

Amiga Adventure Games
Space Quest II
Sierra On-Line
King's Quest IV
Sierra On-Line
Land of Legends
Microlllusions
Dungeon Master
FTL Games

64/128 Arcade Games
Arkanoids
Taito Software

Amiga Arcade Games
Road Runner
Mindscape, Inc.

Amiga Sports Games
Street Sports Basketball
Epyx

Sports Games

by Scott A. May



Clubhouse Sports
Mindscape
$29.95

Ed Ringler's follow-up to last year's *Indoor Sports* proves why he's one of the best game designers in the business. Choose from six outstanding diversions: 3D Pinball, Billiards, Skeeball, Shooting Gallery, Crazy Pool and Foosball. Highly addicting.

Sporting News Baseball
Epyx
$39.95

The first action-oriented baseball game to successfully incorporate detailed statistical play. Hand pick your starting lineup from over 150 baseball legends and 26 real-life teams. Realistic action and dazzling graphics make this one a winner.

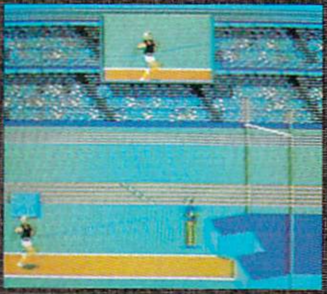


MISL Soccer
Mindscape
$34.95

Indoor version of the fabulous *Superstar Soccer*, this Ed Ringler powerhouse delivers lightning-fast gameplay and a challenge that never ends. Become coach, general manager and team captain in this complex one- or two-player extravaganza.

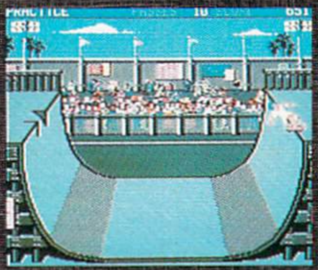
Star Rank Boxing II
Gamestar
$29.95

This sequel to 1985's smash hit offers more hard-hitting action with better graphics and smoother animation.



The Games: Summer Edition
Epyx
$39.95

The graphics just keep getting better and the events more challenging. Multiple players can compete in Sprint Cycling, Hurdles, Pole Vault, Hammer Throw, Uneven Parallel Bars, Rings, Archery and Springboard Diving. Outstanding simulations.



Skate or Die
Electronic Arts
$29.95

One of the cruelest sports games around, and you'll love every minute of it. Compete in five bone-jarring events, each presented with graphics and animation you must see to believe.

Street Sports Basketball
Epyx
$39.95

Free-form neighborhood hoops for the sheer fun of it. This challenging one- or two-player contest guarantees good times for all ages.



Mini-Putt
Accolade
$29.95

At last, a true miniature golf simulation. This one has it all—realistic play action, detailed graphics and a wonderful sense of humor. The only thing missing is a construction option. Maybe next time.



4th & Inches
Accolade
$29.95

By far the best action football game yet for eight-bit computers. Bob Whitehead's design is flawless. Although the computer makes for a tough opponent, this is one of the best two-player sports games you can find.



Take Down
Gamestar/Activision
$29.95

Definitely *not* just another wrestling game. This superb one- or two-player contest features bone-crushing tag team action, arcade graphics and some of most amazing digitized sound effects you'll ever hear.

Amiga

Sports Games

by Gary V. Fields



Earl Weaver Baseball
Electronic Arts
$49.95

This game has all the important elements of baseball including excitement. It comes complete with 26 different ball parks, digitized sounds, instant replays and real-time action. You can draft (or trade) for your own team, and the program will keep the important statistics on both your team and individual players. This one is a must for baseball fans.



Head Coach
MicroSearch Inc.
$59.95

This pro football simulation puts you in the shoes of a coach as you design and send in the plays from the sidelines. This is a strategy game rather than arcade, where the outcome of each call is determined by the success probability the play had against the defensive formation. This one is for serious football fans.



GeeBee Air Rally
Activision
$39.95

A pleasant mixture of both flight/arcade games, this one lets you race a legendary GeeBee airplane over a season, as you try to win a championship (and a good-looking lady's hand). Lots of surprise screens pop up to add both humor and spice as each race in the season gets tougher. This one makes you feel like you are flying—it's just plain fun.



Hardball!
Accolade
$44.95

With this baseball game you manage a team as you pitch, bat, steal, substitute, field and everything else required to win a game. A bad call from the bench can send you to the showers or into extra innings. The animation is in real time here, plus the game uses an unusual behind-the-pitcher perspective.

When we asked columnist Mark Jordan to come up with his picks for our "Best of 1989?" feature, the letter must have had a typo. Here's Mark's choice for the . . .

Best of 1999?

Macbeth/Goliath vs. Gulliver/Gilligan
(Publisher TBA)

This arcade/text game/educational/productivity program is the be-all, end-all of Commodore software. The premise is a tag-team wrestling match. Not only will the user have a great time manipulating Macbeth and Goliath (they fight dirty), but he will learn all of Shakespeare's plays (by heart) in the process, as well as the entire Old Testament (King James version). And he will learn to map the entire universe. (A bonus: Gilligan's Isle is on it.)

There's more. The user will set up a spreadsheet in the process with which he will be able to calculate future events (to the year 2041) as well as explain all past events (it's about time) with unbiased veracity. Finally, we'll know the true reason Attila the Hun had such a bad attitude. It comes with a 5000-page, witty manual, though a handy quick reference guide is all you really need. Mouse, joystick or thought driven. In versions for the Commodore 64, 128 and Amiga. The best news is the price: $7.95, shrink-wrapped at a K-Mart near you. (Not protected.)

Buyer's Guide to Companies

Abacus Software
5370 52nd Street NE
Grand Rapids, MI 49508
(616) 698-0330

Access Software
545 W. 550 South
Suite 130
Bountiful, UT 84010
(801) 298-9077

Accolade, Inc.
550 S. Winchester Blvd.
Suite 200
San Jose, CA 95128
(408) 985-1700

Activision
3885 Bohannon Drive
Menlo Park, CA 94025
(415) 329-0500

Aegis Development
2210 Wilshire #277
Santa Monica, CA 90403
(213) 392-9972

Antic Publishing
544 Second Street
San Francisco, CA 94107
(415) 957-0886

Applied Reasoning Corp.
86A Sherman Street
Cambridge, MA 02140
(617) 492-0700

Artworx Software
1844 Penfield Road
Penfield, NY 14526
(716) 385-6120

Avalon Hill Microcomputer Games
4517 Harford Road
Baltimore, MD 21214
(301) 254-5300

Baudville
5380 52nd Street SE
Grand Rapids, MI 49508
(616) 698-0888

Berkeley Softworks
2150 Shattuck Avenue
Berkeley, CA 94704
(415) 644-0883

Bill's Boards
9528 Miramar Road
Suite 181
San Diego, CA 92126
(619) 486-0908

Britannica Software
345 Fourth Street
San Francisco, CA 94107
(800) 572-2272

Broderbund Software
17 Paul Drive
San Rafael, CA 94903
(415) 492-3200

Brown Boxes, Inc.
26 Concord Road
Bedford, MA 01730
(617) 275-0090

Capcom U.S.A., Inc.
1283-C Mountain View/Alviso Road
Sunnyvale, CA 94089
(408) 745-7081

Cinemaware Corporation
4165 Thousand Oaks Blvd.
Westlake Village, CA 91362
(805) 495-6515

Commodore Business Machines, Inc.
1200 Wilson Drive
West Chester, PA 19380
(215) 431-9100

Creative Microsystems
10110 SW Nimbus, B-1
Tigard, OR 97223
(503) 684-9300

DataSoft
19808 Nordhoff Place
Chatsworth, CA 91311
(818) 886-5922

Designing Minds, Inc.
3006 N. Main
Logan, UT 84321
(801) 752-2501

DigiTek
104 W. Seneca
Suite 4
Tampa, FL 33612
(813) 933-8023

Discovery Software
163 Conduit Street
Annapolis, MD 21401
(301) 268-9877

DLM Software
1 DLM Park
P.O. Box 4000
Allen, TX 75002
(800) 527-4747

Dr. T's Music Software
220 Boylston Street
Suite 206
Chesnut Hill, MA 02167
(617) 244-6954

EaseWare
25 Belair Road
Wellesley, MA 02181
(617) 237-2148

Elan Design
P.O. Box 31725
San Francisco, CA 94131
(415) 621-8673

Electronic Arts
1820 Gateway Drive
San Mateo, CA 94404
(415) 571-7171

Epyx, Inc.
600 Galveston Drive
Redwood City, CA 94063
(415) 366-0606

Gold Disk
2171 Dunwin Drive, #13
Mississauga, Ontario,
Canada L5L 1X2
(416) 828-0913

Great Valley Products
P.O. Box 391
Malvern, PA 19355
(800) 426-8957

Haitex Resources, Inc.
208 Carrollton Park
Suite 1207
Carrollton, TX 75006
(214) 241-8030

Hash Enterprises
2800 E. Evergreen Blvd.
Vancouver, WA 98684
(206) 256-8567

Hi Tech Expressions, Inc.
584 Broadway
New York, NY 10021
(212) 941-1224

Hilton Android Corp.
P.O. Box 7437
Huntington Beach, CA 92615-7437
(714) 963-4584

Hypertek/Silicon Springs
205-2571 Shaughnessy Street
Port Coquitlam, B.C. V3C 3G3
Canada
(604) 922-9262

Impulse, Inc.
6870 Shingle Creek Pkwy.
Suite 112
Minneapolis, MN 55430
(612) 566-0221

Infinity Software
1144 65th Street
Suite C
Emeryville, CA 94608
(415) 420-1551

Infocom
125 CambridgePark Drive
Cambridge, MA 02140
(617) 492-6000

Inkwell Systems
5710 Ruffin Road
San Diego, CA 92123
(619) 268-8792

InterActive Softworks
2521 S. Vista Way
Suite 254
Carlsbad, CA 92008
(619) 434-5327

Interstel
P.O. Box 57825
Webster, TX 77958
(713) 486-4163

Intracorp, Inc.
14160 SW 139th Court
Miami, FL 33186
(800) 468-7226

KFS Software
P.O. Box 107
Largo, FL 34649-0107
(813) 584-2355

Learners Image
P.O. Box 3669
Logan, UT 84321
(801) 752-5608

The Learning Company
6493 Kaiser Drive
Fremont, CA 94555
(800) 852-2255

Mediagenic
See Activision

Microillusions
17408 Chatsworth Street
P.O. Box 3475
Granada Hills, CA 91344
(800) 522-2041

MicroProse
180 Lakefront Drive
Hunt Valley, MD 21030
(301) 771-1151

MicroSearch
9896 Southwest Freeway
Houston, TX 77074
(713) 988-2818

Micro-Systems Software, Inc.
12798 W. Forest Hill Blvd.
Suite 202
W. Palm Beach, FL 33414
(407) 790-0770

MicroWay
Cordage Park, Bldg. 20
Plymouth, MA 02360
(617) 746-7341

Mindscape, Inc.
3444 Dundee Road
Northbrook, IL 60062
(312) 480-7667

New Wave Software
P.O. Box 438
St. Clair Shores, MI 48080
(313) 771-4465

Omnitrend Software, Inc.
P.O. Box 733
W. Simsbury, CT 06092
(203) 658-6917

Origin Systems
136 Harvey Road
Building B
Londonderry, NH 03053
(603) 644-3360

The Other Guys
55 N. Main Street
Suite 301
Logan, UT 84321
(801) 753-7620

PAR Software
P.O. Box 1309
Vancouver, WA 98666
(206) 694-1539

Patech Software
133 Walnut Avenue
Somerset, NJ 08873
(201) 545-1571

Pioneer Computing
2469 E. 7000 South
Suite 200
Salt Lake City, UT 84121
(801) 942-1174

Polarware/Penguin Software
P.O. Box 311
Geneva, IL 60134
(312) 232-1984

Precision Software, Inc.
8404 Sterling Street
Suite A
Irving, TX 75063
(214) 929-4888

Progressive Peripherals & Software
464 Kalamath Street
Denver, CO 80204
(303) 825-4144

Psygnosis Ltd.
c/o Computer Software Services
2150 Executive Drive
Addison, IL 60101
(312) 620-4444

RacerMate
3016 NE Blakely Street
Seattle, WA 98105
(206) 524-7392

Rainbird Software
P.O. Box 2227
Menlo Park, CA 94026
(415) 322-0412

Scinort Micro
P.O. Box 17546
Austin, TX 78760
(512) 440-1022

Sir-Tech
P.O. Box 245
Ogdensburg, NY 13669
(315) 393-6633

Software Terminal
3014 Alta Mere
Ft. Worth, TX 76116
(817) 244-4150

Sound Quest
5 Glenaden Avenue East
Toronto, Ontario M8Y 2L2
Canada
(416) 234-0347

Spinnaker
One Kendall Square
Cambridge, MA 02139
(617) 494-1200

Springboard Software
7808 Creek Ridge Circle
Suite 110
Minneapolis, MN 55435
(612) 944-3915

Strategic Simulations, Inc.
1046 N. Rengstorff Avenue
Mountain View, CA 94043
(415) 964-1353

SubLogic
501 Kenyon Drive
Champaign, IL 61820
(217) 359-8482

Sunburst Communications
39 Washington Avenue
Pleasantville, NY 10570
(914) 769-5030

Suncom
290 Palatine Road
Wheeling, IL 60090
(312) 459-8000

SunRize Industries
3801 Old College Road
Bryan, TX 77801
(409) 846-1311

Syndesis
20 West Street
Wilmington, MA 01887
(508) 657-5585

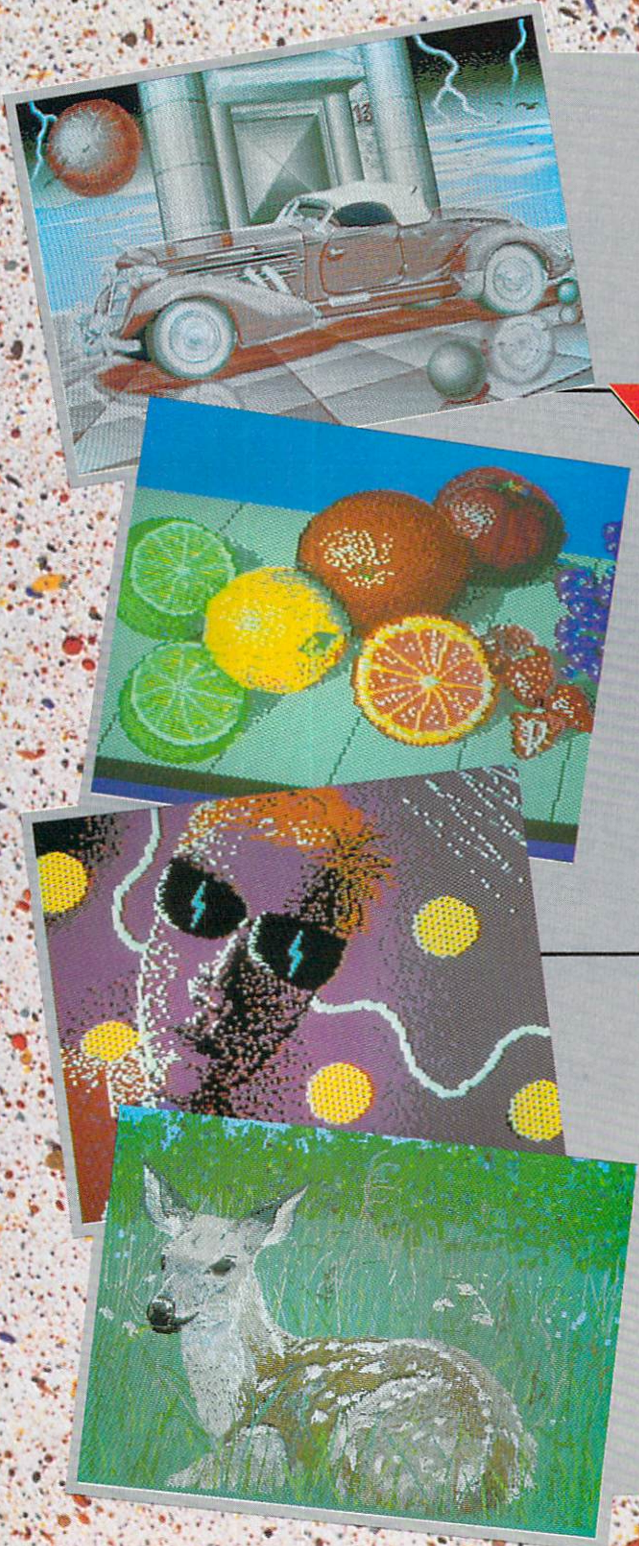
Titus Software
20432 Corisco Street
Chatsworth, CA 91311
(818) 709-3692

Unicorn Educational Software
2950 E. Flamingo Road
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Sincerely,

Brad Fowler

Brad Fowler
Winston, OR

We're pretty proud of our 1988 Commodore 64 and Amiga Graphics Contest Winners, and we want to show them off through 1989. That's why we've picked out twelve winners to feature on the **NEW 1989 *Commodore Magazine* Calendar.** The calendar is a giant-sized poster (20.5″ × 32.5″) featuring some of the best amateur Commodore and Amiga artists around.

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(See page 70 for details on Commodore Magazine's 1989 Graphics Contest.)

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COMING ATTRACTIONS

PART II

by John Jermaine

Last month's crystal ball revealed upcoming releases from companies like Electronic Arts, Accolade, Access and Taito. This month we'll take up where we left off with the latest and soon-to-be-greatest from Capcom, Data East, Konami, Activision, SubLogic and others. We are particularly pleased to see the number of titles being released for both the Commodore 64 and Amiga.

Activision

64/128: *Ocean Ranger*, a realistic missile ship simulation, is the latest thing on the software sea. The program takes the user to four of the world's "hot spots": the Bering Sea, Central America, Southeast Asia and finally the Persian Gulf. Once you have an assignment, be prepared to encounter enemy destroyers, aircraft, submarines and mines. Your vessel is fast on the water, but it's also well-armed for a fight. The ship carries 76mm cannons, Sea Sparrow and Harpoon missiles, chaff, depth charges, and an ECM Radar Jammer. There are 16 levels of difficulty in the program. Other features include: 360-degree point of view, damage reports, detailed maps and briefings. *Ocean Ranger* missions are challenging and exciting, while the vessel appears to be an authentic reproduction of a typical Navy missile ship. You can take command of your vessel late in October.

Ocean Ranger missions are challenging and exciting, while the vessel appears to be an authentic reproduction of a Navy missile ship.

October is also the month when you can assume the role of a monstrous creature on a software rampage. Yes, *Rampage* (the coin-op masterpiece) has finally surfaced in home computer land. The program features three huge monsters (gorilla, reptile and wolf) who are desperately fighting for survival. They climb skyscrapers, punch buildings (until they fall down), smash attacking choppers, destroy tanks, step on soldiers, and eat the people who are trying to shoot them. There are approximately 157 cities to "trash" in the game, as you search for food to maintain your level of strength and stamina. Your giant companions are also trying to put you out of commission, so get them before they get you.

Predator is planning to stalk microcomputer prey in November. Activision tells me the program is patterned after the storyline of the popular movie. The player, taking the Arnold Schwarzenegger role, leads an elite commando team through the jungles of South America. Your mission consists of locating and rescuing some kidnapped American diplomats from the clutches of rebel forces in the area. What seems like just another dangerous assignment gradually evolves into a frightening experience. Members of

Pete Rose Pennant Fever

Next year *Pete Rose Pennant Fever* from Gamestar invites you to play the real game of baseball on your 64. Yes, Pete "Charlie Hustle" Rose challenges you to manage his own expansion team, through ten seasons of play, as 24 league teams battle it out for the pennant. But this isn't just a game of management and statistics. Players can pitch, hit, run, field, throw and steal bases in the program (just like they do on a real baseball diamond). Other features include: fabulous TV-style graphics, digitized sounds and eight different points of view (from behind the plate, at every base and from four outfield positions). Pete Rose trivia questions appear on screen between innings. In the end, *Pete Rose Pennant Fever* is one of the sharpest home computer baseball games I've seen to date. Like Pete Rose, it belongs in a hall of fame. Now that you've heard my comments on the subject, let's find out some behind-the-scenes details from Scott Orr (president of Gamestar when the game was developed) and Pete Rose himself.

John Jermaine: Why did you choose Pete Rose to contribute to the design of your new baseball program?

Scott Orr: We were trying to re-create the experience of playing real regulation baseball for the first time on a home computer. When it came to finding an expert on the subject, I had one person in mind for the job. Pete Rose has been in professional baseball as a player and manager for more than 25 years, and he's also been the manager of the Cincinnati Reds for a while. His expertise in these two areas made him a valuable asset for the project. We were really very fortunate that Pete agreed to work hand-in-hand with us to make *Pennant Fever* the most realistic baseball game on the market.

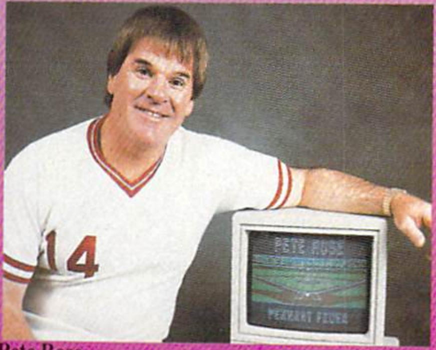
Jermaine: Had you played with microcomputers before *Pete Rose Pennant Fever* came along?

Pete Rose: No, I hadn't. We did our thing in San Francisco one day, shortly before a Reds baseball game. Scott let me play around with the program for half an hour to 45 minutes. They finally had to tell me we were going on the air at the ball park to get me to stop playing *Pennant Fever*. It really had me hooked. You move the fielders, you move the hitter, and you even control the swing of the bat. So you get pretty involved in the whole thing. I really don't know much about computer games, in general, but I'm glad I had the opportunity to design and create this one.

Jermaine: Tell me more about *Pete Rose Pennant Fever*.

Orr: Well, we used all ball clubs in the program. Players in the game were actu-

Continued on page 114



Pete Rose



Pete Rose Pennant Fever



Rampage



U.S.S. Ocean Ranger



Take Down

your group are slaughtered one by one, until you find yourself alone against an intergalactic manhunter (who stalks you for the sport of it). *Predator* is basically a fast-moving arcade game that challenges the player to acquire the proper weapons and use them wisely to stay alive.

Capcom U.S.A., Inc.

Amiga: Late in the third quarter, Amiga translations of *Bionic Commandos* and *Street Fighter* will be introduced to the public. In case you haven't heard of *Bionic Commandos,* it's a futuristic military operation (where your soldier has telescoping arms, the latest weapons and bionic powers). Players invade the enemy fortress, slaying their foes and deactivating their doomsday weapons. Now that you've heard the briefing, the rest is up to you.

Capcom's *Sidearms* is a fast-moving arcade game that takes place in outer space.

Street Fighter, on the other hand, is a quest to become the greatest street fighter of all time. You've accepted challenges to do battle around the world with ten opponents who also want the title. Sometimes a fight is strictly a test of strength and skill, but several of your adversaries have magical powers. The program's graphics are great, the sounds are interesting, and the action never stops.

Sidearms and *1943* will also be released during the fall. Capcom's *Sidearms* is a fast-moving arcade game that takes place in outer space. The user can acquire a number of different weapons as he blasts his way through enemy fleets and zones of floating space debris. I really liked the 64 version of the game, but the Amiga translation has been rewritten to take advantage of the system's superior sound and graphics capabilities.

In *1943,* Amiga software pilots fly missions against the powerful Japanese fleet as it prepares to invade Midway Island. This is a great shoot-'em-up, where the player has to deal with enemy bombers, fighters, aircraft carriers, destroyers and the like. It also pays to keep an eye out for the enemy's secret weapons. If they can't defeat you by conventional means, expect them to try something a bit more sinister.

Coming in 1989: *Forgotten Worlds,* for the 64 and Amiga, is slated to ship early in the year. The user assumes the role of an intergalactic adventurer who is fighting for his life in a hostile sector of space. Players battle giant snakes that suddenly appear and try to swallow you, monsters that resemble the creatures in *Aliens,* fierce warriors who look like ancient Egyptians and a number of other lethal foes. In the two-player mode, the heroes join forces to save the universe. It's interesting to note that the characters have maximum fire power when they're close together, so don't let your enemies drive you apart. The program also features amazing 3D graphics, eight different colorful scenes, a store that sells various types of weapons, and a new way of look-

Silent Software

Silent Software, a new name in the industry, is showing a lot of promise. Its people are veteran software developers, and they've set their sights higher than most of the Amiga competition. I recently interviewed Reichart Von Wolfshield, a representative of the group, who told me about their future plans.

John Jermaine: Tell me about your new software projects.

Reichart Von Wolfshield: Do you remember Jim Sachs, the programmer/artist who created *Saucer Attack* several years ago on the 64? He's currently working on an Amiga project called *20,000 Leagues Under The Sea.* The graphics are absolutely incredible, and Jim is doing the job right. We expect to release the product sometime near the end of 1989.

By the end of 1988, however, we hope to have *Onion* (our first Amiga release) ready to put on the market. *Onion* is basically a sophisticated black and white animation tool that was originally developed for in-house use. I know what you're thinking. Why would anyone want to create a black and white paint package for the Amiga? The program is similar to a cartoonist's pencil test or "flip book" (where you flip through the pages to pro-

Onion enables our people to generate true animation in a hurry, without having to draw things out on paper a thousand times or more.

Continued on page 115

ing at things (you can rotate your perspective a full 360 degrees). In short, I believe *Forgotten Worlds* is destined to become a software classic.

As the third quarter comes to a close, *Ghosts and Goblins: Part II* should be out for both the 64 and Amiga home computers. The program contains ghastly zombies, snakes that come up from the ground, a terrible storm (with plenty of wind, rain and lightning), and numerous interesting visual effects. If you're addicted to action-packed arcade games, *Ghosts and Goblins II* will have you hooked in a matter of seconds.

Strider, for the two systems, is also scheduled to ship in June or July. No details are available at this time, however.

Cinemaware Corporation

*[**Editor's Note:** See "Cinemaware: In Search of Interactive Excellence" in the November issue of* Commodore Magazine *for a complete update on Cinemaware's releases through 1988.]*

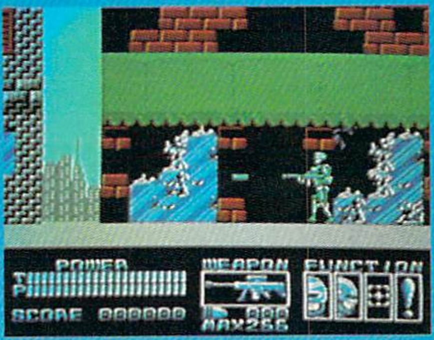
Coming in 1989: Bob Jacobs, president of Cinemaware tells me they have no plans to develop a sequel to *The Three Stooges* in the near future. There will be two follow-up TV Sports projects next year, one of which will be a basketball game. One of the best-kept secrets at Cinemaware, however, is their new horror movie project based on classic 1950's black and white films. This program will be larger than *Lords of the Rising Sun* and promises to be an exciting experience.

Data East

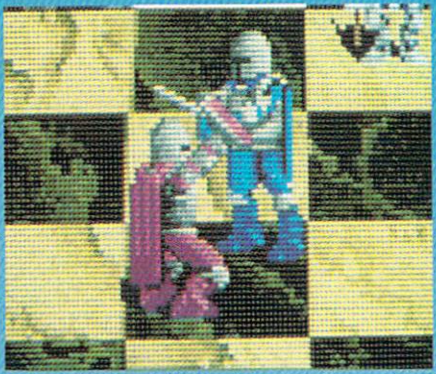
64/128: *Victory Road* (the sequel to *Ikari Warriors)* was scheduled for an October release. This time, the three heroes of *Ikari Warriors* battle the evil guardians of the Temple of Demons. The player can protect himself by picking up a number of weapons including: flame throwers, super grenades and several different types of guns. A smart user manages his fire power like a business because everything is in short supply. After completing many levels of play and destroying hordes of powerful monsters, you finally reach your destination and confront the mighty demon of the temple.

Super Hang-On, an elaborate motorcycle simulation, is also scheduled to ship in October.

Coming in 1989: Early in the year, *Robocop* will be knocking down the doors of 64 owners. Data East couldn't reveal any information about this product, except to



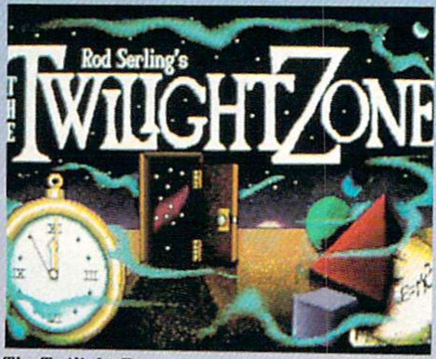
Robocop



Battle Chess



Neuromancer



The Twilight Zone

The Honeymooners

Mike Breggar, First Row's Director of Software Design, talked to me about *The Honeymooners Game*. Mike is a 35-year old trivia buff who's a podiatrist by day and a professional programmer by night. I've also asked Howard Berk, Director of Licensing at Viacom Productions, to comment on the subject.

Jermaine: Tell me about *The Honeymooners*.

Mike Breggar: Basically, it's an interactive situation comedy on the computer. The Raccoon Lodge Convention is being held in Miami Beach, Florida, and you (as Ralph, Ed, Trixie or Alice) want to attend that special conference. This means the player has to earn a lot of money in order to catch a train and journey to the land of swaying palm trees. The train moves along on railroad tracks, which resemble the spaces of a conventional board game. Players get to move one track space for every $10 earned in the program. *The Honeymooners* also contains four different scenarios (one about each of the famous characters).

Jermaine: What are the scenarios like?

Breggar: Two mini-games are nearing completion. One scenario has you, as Ralph, sitting behind the wheel of a city bus where a number of things are taking place. Whenever people are waiting at a bus stop, for example, you must pick them up. Each passenger will tell you where he wants to go. Then you have to remember the name of that street and drop them off at the proper location. The user receives a certain amount of money for every passenger he takes to the right destination.

In the Ed Norton challenge, the player goes into the sewer system and tries to fix leaks in the pipes. The farther you go into the sewer, the more money you earn making repairs. There's also a bonus leak, that's worth more money than the standard leaks. So make as many repairs as possible, and get out of the sewer before time runs out or you won't collect any money.

Jermaine: How are the computers' capabilities used in *The Honeymooners*?

Breggar: We're using digitized sound

Continued on page 116



Platoon



Contra



Boot Camp



Jackal

say it faithfully follows the storyline of the movie. More home computer coin-op translations are also under development. These titles include: *Bad Dudes, Guerilla Wars* and *Heavy Barrel* (the hostage rescue game).

DigiTek

64/128 and Amiga: When Rambo is nowhere in sight, you can always count on *Joe Blade* to get you out of a jam. The plot of this game is simple: Crax Bloodfinger, leader of an infamous band of terrorists, has kidnapped six important world leaders. Unless the countries pay $30 billion dollars, the heads of state will lose their heads. The captives are being held in Bloodfinger's fortified headquarters, which is crawling with members of his elite private army. As the deadline approaches, the nations refuse to pay the ransom in an act of defiance against global terrorism. Enter Joe Blade. He's a fearless individual who received his basic training in a Tibetan monastery. Armed with a semi-automatic gun, our hero infiltrates the enemy stronghold. Now it's time to rescue the prisoners and set explosives to decimate the place. When all six bombs have been activated, Joe has about twenty minutes to make his escape. Watch for this exciting new product on both the Commodore 64 and Amiga late in the year.

Howdy, pardner! If you're looking for real western action, mosey on down to the keyboard and load up *Western Games*, a new multi-event program that dares you to participate in six unusual contests. There's Arm Wrestling, Beer Shooting, Quid Spitting, a Dancing Contest, Cow Milking and an Eating Competition. This is a real break from the usual shoot-'em-up programs. Overall, I give *Western Games* four stars (out of five) for its comical graphics, colorful backgrounds, fluid motion and interesting sounds. You can buy this time capsule competition early in the fourth quarter.

The Cyber Complex, another fourth quarter release, transports you into the gloomy world of the 21st century. You live in an underground city, ruled by an ultra-powerful robot. This supercomputer has a problem: it's become a little paranoid over the years. In fact, the machine is exterminating intelligent human beings whom it considers a threat to its future existence. You become the robot's chief trouble shooter; your job is "rubbing out" people the mechanism considers dangerous. Whenever you kill one of these characters, you can pick up his or her credits and any objects that person was carrying. You can also purchase many useful items including cars, bazookas, bombs, hand grenades, radar equipment, a solar calculator, etc. A little robot, your partner in these adventures, can also be equipped with numerous special attachments. As you gain experience, your shirt changes color. You gradually evolve into one of the intelligentsia. Now you are the hunted instead of the hunter. The Commodore 64 version should be available in October; the Amiga is scheduled to ship in November.

Continued on page 113

Music-X

I spoke with play-tester Paul Stookey (of Peter, Paul and Mary), to find out more about MicroIllusions *Music-X*.

John Jermaine: Is *Music-X* a program for the average consumer who wants to make music on his Amiga?

Paul Stookey: I have a feeling they'll really have to love computers in order to use the product. Even though I haven't seen the manual yet, I believe *Music-X* was designed for the serious musician and the home computer hacker out there.

Jermaine: What do you think of the program overall?

Stookey: I'm initially impressed with its menu and basic capabilities. The sequencer allows you to save musical events two different ways: (1) in real time (as you're actually playing it), or (2) in step time (note by note on the keyboard).

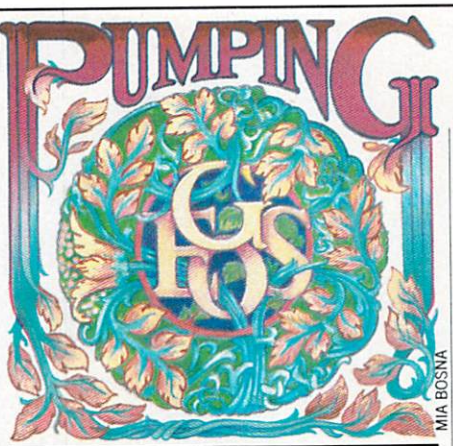
The advantage of MIDI-oriented software is you're not committing anything to the medium. You're only committing the memory of generating music to the medium. When you play the recording back, it's all first-generation sound. In simple terms, *Music-X* is like a robot that will continually repeat the same musical pattern you feed into it. That's why a lot of "garage tapes" are appearing on the market these days. All an artist has to do is pack up his equipment (an Amiga, *Music-X* and the instruments he uses), work in his garage for a while, take everything to a legitimate studio, and he can make recordings featuring first-generation background music. In one pass, you can record genuine first-generation sound where tempo information occupies one track, the melody line is on another track, the base line is on still another track, etc. There

Continued on page 117

by Mark Jordan

GEOS 2.0

Berkeley Softworks' series of GEOS-compatible products opens up a world of opportunity to Commodore users. Take some tips from Mark Jordan and soon you too will be Pumping GEOS.



GEOS 2.0 is new and improved. Very improved. No doubt you've seen the ads which tell of many of the refinements of the package. And it really is a package: now you get *geoSpell, geoWrite 2.1, Text Grabber,* and more with the GEOS system. Everything is faster, smoother and easier to use. It is truly a program that has come of age.

But is it worth it? You may already have invested over $100 in GEOS software. Does the new, improved product merit another $25 dollars of your hard-earned money? Or would you be happier spending it on a supreme pan pizza? Because let's be honest, folks, if a piece of software can't pass the pizza test, it's just not worth buying.

I think it's worth it. If you're a GEOS user you will appreciate more than any one particular feature, the more professional "feel" of the program. Everything seems to be getting even more intuitive than GEOS already was, and that's saying something.

The Little Things

Take the clock, for instance. When you boot up GEOS 2.0, a clock/calendar is sitting up on the command line just waiting for you to type in the correct time and date. It takes about five seconds to do so. Just click on it and type. There's no hunting around for drop-down menus or waiting for this or that to load into memory. It's there and it's working. The proof of its value is that I find myself always using it as soon as I boot up. This is in contrast to the dozens of other programs and operating systems I've used where I never ever input the time.

Another real nice touch is the fact that in *geoPaint* you can now use the cursor keys to move the pointer a pixel at a time. With a mouse or joystick it's tough to make such delicate movements, and lots of times it's delicate movements you want. This feature, though not promoted as much as some of the others, adds im-

Everything seems to be getting even more intuitive than GEOS already was, and that's saying something.

mensely to the professional feel of GEOS. Here's another subtle improvement: now, when you open the Photo Manager, it automatically opens the first file on disk. When using *geoPublish,* this saves one step. Not much, until you start *geoPublishing* a lot, in which case any steps saved are appreciated.

Ever trashed a file you wished you hadn't? You can now un-trash it, so long as it's the last one trashed.

The Other Things

The DeskTop seems to be spiffed up and sped up in almost every way. Now you can move icons around on the disk note pad where you want them instead of first position first, etc. And now, if you select a new printer driver or input driver, the icons will exchange position on the disk note pad automatically.

I also appreciated the multiple-icon feature. Now you can select more than one icon at a time to move, copy, trash, whatever. The procedure is simple and intuitive: simply hold down the COMMODORE key as you click icons, then when you want to perform some action on the group, click on any of the highlighted icons, and you'll get a new icon called "Mult-file" which you can manipulate.

A feature that 1571 owners will really like is the one that lets you now use both sides of your disk. No longer is a two-drive system a minimum setup. You can put lots of fonts and files on disk and still have more than a byte or two left.

They say in the literature that file copying is faster, though I couldn't verify this. Just like they say that *geoSpell* is faster—38% faster—though I couldn't verify this either because I never had the original *geoSpell.* I can verify that everything *seems* faster.

And guess what. You can now color-code your icons by type. Thus you could have all your applications blue, your *geoWrite* files red, and so on. I'm a believer in color-coding but it takes long-term use to really make it work. At any rate, with the old GEOS, you couldn't do it and now you can.

GeoWrite is version 2.1 which a lot of you already have. If you're still working with an earlier version, this inclusion alone may make GEOS 2.0 a must buy.

GeoPaint is where I feel the most useful improvements have come. A constrain feature—which works with lines, circles, and boxes—has been added. With it you can draw lines that are either vertical, horizontal, or 45-degree angles (and nothing else). With constrain and circle selected, you will draw perfect circles. Shut it off and your circles will become ellipses. Turn it back on and select the box icon and you'll get boxes only, no rectangles. Shut it off and rectangles are available.

The bitmap scaling feature is my favorite. If you own *geoPublish,* you'll quickly recognize it from that program. Now you can enlarge, stretch or shrink any item you grab. It's easy to do, just use the Edit box tool to grab something, go to the Edit menu and choose "copy" or "cut," define a new region any size with the Edit box tool, and choose "paste" from the Edit menu. You'll get a dialog box that will let you center your original item if you wish, or scale it to size. You can smooth it (get rid of the jaggies) in the process and/or make it either transparent or opaque. Last of all, you can even change the pattern of the graphic. This means that instead of all black areas being black, you can make them any of the standard GEOS patterns. Check out the "Pumping GEOS" document to see bitmap scaling in action.

There are several other improvements to *geoPaint,* many of which I haven't really tested yet. As I stated earlier, the cursor control of the pointer is a big small improvement, if you know what I mean.

Conclusions

Is everything perfect now in GEOS-land? No. I still don't particularly like sitting and waiting so much when I'm using the system. I don't have the RAM expander and that would make a big difference,

Continued on page 112

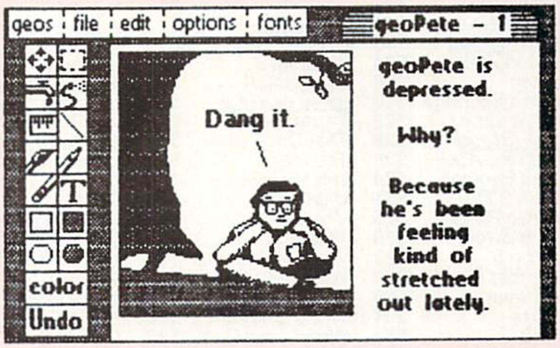
Pumping GEOS

Vol. 1, Num. 4

The Ongoing Adventures of geoPete

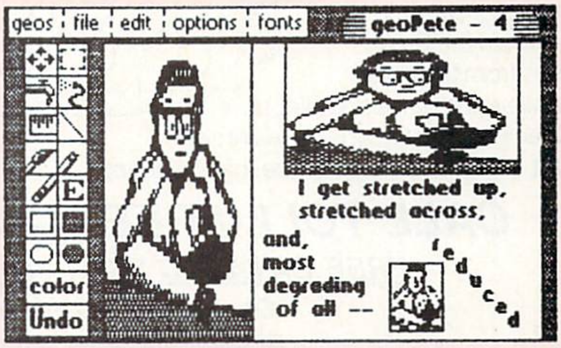
The best new features of the GEOS 2.0 package come with geoPaint. And the best of these features is the Bitmap scaling feature. Below I have re-created a geoPaint screen to show what kind of effects can be easily achieved using bitmap scaling.

Also, just for fun, I've included a few "errors" in frames 2 - 4 of geoPete. To be exact, there are 3 of them per frame. Use the first frame as your (excuse the pun) frame of reference. geoPaint is excellent at creating these kind of observation-powers puzzles. In an upcoming issue, I'll make a real tricky one.









Mouse Specks

Now that the mouse has become an integral part of many home computer systems, the question arises, what do you call more than one of them. That's easy, comes the hasty response -- **mice**. Anyone knows that the plural of mouse is mice.

But not so fast. The word **lice** is the plural of **louse** and you know as well as I do that you'd never call those two jerks who work at the office **lice**. You'd call them the a couple of **louses**.

Berkeley Softworks seems to think **mice** is the acceptable form. Page 2-27 of the GEOS 1.2 User's Manual states "Berkeley Softworks is working with Commodore and other **mice** manufacturers..."

I beg to differ. I have two **mouses** at my house and instinctively, whenever anybody in the family mentions them in the plural, they say, "Hey, how come both **mouses** are always missing?"

What's right? Well, I happen to know that, contrary to popular belief, the real rules for language come not from a few elitists guarding the store, but from you and me and all the other speakers in the land.

So now's your chance: write to me in care of **Commodore Magazine** and tell me, **mouses** or **mice**. I'll report the results in an upcoming issue.

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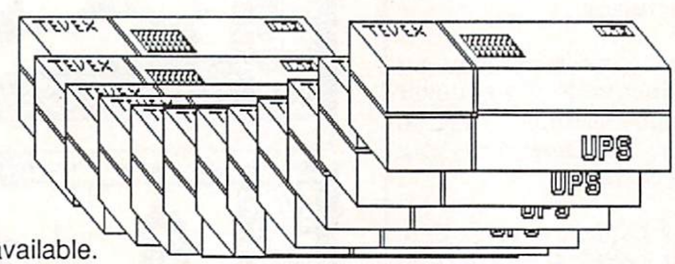
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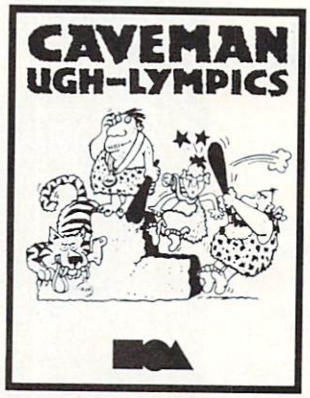
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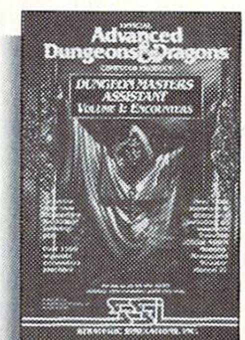


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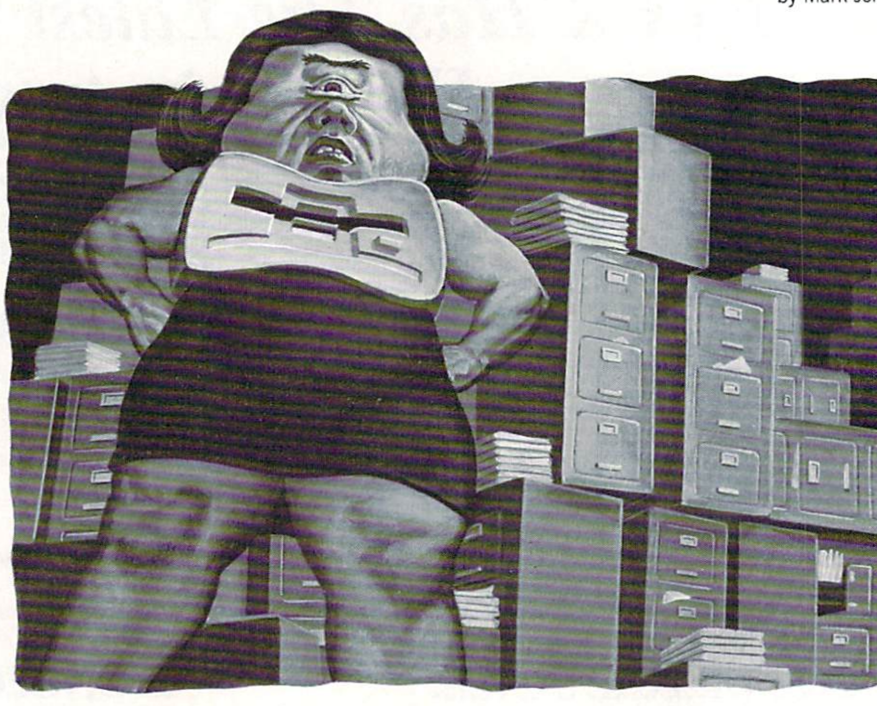
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by Mark Jordan

A Beginner's Guide to 1541/1571 Disk Files



ED SAUK

Suppose you buy a business, a solid business. Your first day at the place you are astounded at the hundreds of file cabinets. You ask one of the employees, "How does anyone know what record is in what file?" He responds, "Simple, just ask Hilda." Hilda, it turns out, is a one-eyed file librarian.

And she's mean. So you decide to leave all that kind of work to the others while you sit in the office and do presidential stuff like giving orders.

For a while, this works.

Then one night you are at the office late, reading box scores from *USA Today.* The phone rings. You answer. The caller, your biggest customer, wants to know about his account. Sweat beads appear on your brow. You just knew this day was going to come. You rush to the files and begin thrashing about. Two hours later you leave, file folders strewn on the floor and one less customer to worry about. An unlikely scenario? Not if you see it as an analogy. Let me interpret it. The business you bought is your computer. Hilda is the operating system (DOS) that comes with your disk drive. The files, ah need you ask? They are your disk files. And the late-night call? That's the first time you decide you need to personally get at your disk files.

Have you had your late-night call yet? You will. Maybe it will happen when you purchase a new word processor and want to transfer your old files to the new system. Or maybe one day for who-knows-what reason some old files won't load. Or maybe it will come when you decide to write a little program that needs to save information on the disk.

I cannot tell you when it will happen, but happen it will and this much I can do: prepare you. That way, instead of panic, anger, and regrettable behavior, you can answer that "phone" with confidence.

This Better Not Get Complicated

I think the reason so many computer owners shy away from learning how to master the disk drive is because they've read a little about the processes, and it has left them blank. Too many terms, like block, track and sector, and too many cryptic abbreviations, like BAM, GRC, and MFM. As Curley of Three Stooges fame might say, "This is confusing." Jargon is okay—in fact, it's quite useful—but not for this article. Let the following "theory" be sufficient: disks hold data like record albums hold sound. The disk drive's brain knows where to "drop the needle" if we just ask it to. It knows this because it keeps a catalog, or directory, of just where everything is located on the disk. Think of this like a library with its card catalog telling where all the books are. In this library, however, users are not allowed to get any books themselves: they must request their information from a reference librarian.

The reference librarian in your disk drive is the operating system—one-eyed Hilda. (My invention: don't expect to find this in your manual index. Her one eye, by the way, is the disk drive's light.) And Hilda is extremely etiquette-conscious. Picky. If you want information from her you will have to ask for it in just the right manner or risk her angry stare.

Of course, this applies not only to getting information from your disk, but also to storing it there as well. You will work via this same nit-picking librarian and you will obey all rules.

That's the bad news. The good news is that there are only ten rules for you to worry about.

Ten?! Yes, but a mere three program lines will accomplish all ten.

To learn the process, you will need a disk that you can save to. Get one and put it in the disk drive and turn your computer on . . . it's time head down to the library.

Writing a File

We will start by writing a short file to the disk. To write a file means to create a new one on the disk, even if we don't put anything in it. We'll give it a name and Hilda, our disk drive, will put it into the card catalog. Then it's there for whenever we want it.

So let's get creating and learn the rules. Type the following line:

```
10 OPEN 2,8,2,"TEST,W"
```

RULE 1: Politely get Hilda's (your disk drive's) attention. The OPEN statement is the equivalent of saying to your disk drive, "Er, excuse me but I need some help."

RULE 2: Take a number, the first of 3. This number is your "file number." Hilda won't mess with you if you don't have it. The number should be between 1 and 127. We chose a 2 in this instance. Why 2? Why not?

Place this file number immediately after each OPEN statement with no punctuation between the two. A comma should follow it and all other numbers in your OPEN statement. Once a file is OPENed, any time we want to refer to it, we simply use this number.

RULE 3: Pick an 8. This is the device number. Why 8? Commodore disk drives

come shipped as device number 8. It's this number that assures Hilda that you're talking to her. Had we put a 4 here, the printer would have stirred. A 1 would've put the cassette recorder into motion, if we had one. When working with Commodore disk drives, we will always use the number 8 as our device number, unless we have a second drive. Those of you who do, already know that you had to change its device number, most likely to 9. It's very simple to write (or read) from the second drive—you just change this number to 9. By the way, don't forget your comma after this number.

RULE 4: Pick another number, this time one between 2 and 15. Again, a comma must follow it. This number is officially known as the channel number, but most folks refer to it as the secondary address. Secondary addresses are the source of much confusion when dealing with printers and interfaces. With disk drives, you only need to know the following: an address of 0 is reserved for program loads, 1 is reserved for program saves, and 15 is reserved for special disk drive commands.

So why are we using a 2 here? Because we used 2 as our file number. It just makes it easier to keep track of things.

RULE 5: Tell the disk drive the name of the file you want to store. Our example here chose the name "TEST". Don't omit the quotations marks or you'll get about as far with Hilda as a child trying to train a cat to sit.

RULE 6: Tell the disk drive whether you want to store or retrieve a file. The comma/W tells her that you want store one (the W stands for "write" which is synonymous with "store"). Later, we'll learn to use a comma/R to retrieve a file. Since we're writing a file, it's important to our disk drive to see if a file already exists by that name. Hilda will check. If none exists, she will get a file folder out of the drawer and create a new entry to catalog. That's what she's doing now.

There, that wasn't so bad. Now that we've got our file on Hilda's desk, any time we want her to do anything with the file all we need to do is refer to it by its number. So let's do something with it.

20 PRINT#2,"THIS IS A TEST."

RULE 7: Tell the disk drive to place something in our file. PRINT# is what Hilda needs to hear.

RULE 8: Tell the disk drive which file. It's 2, remember. And don't forget to follow the number with the comma, as always.

RULE 9: Tell the disk drive what to put in the file. Now here you have some options. You can put things in the file just the same way you can print things onto the screen: with direct quotes, with variables, or with plain old numbers. In our line 20, we simply put what we wanted to save inside of quotes and that was that.

But it would have worked just as well to send that data in the form of a variable. For example, we could have defined A$ = "THIS IS A TEST." and then simply used this format: PRINT#2,A$

This is a much more versatile method and one you'll usually use when writing programs.

If we wanted to send a number to the file, we could have done it like this: PRINT#2,7

Or we could have used a variable there also instead of the direct number. As in: N = 7:PRINT#2,N

After line 20 executes, Hilda will do exactly as she's told, plus she will add a RETURN to the end of what we've printed. This little habit of our computer is important to know about. For those of you new to programming, a RETURN to you is simply a press of the RETURN key. The result is that the cursor will jump to the next line on the left margin. It gets its name from electric typewriters which return the carriage each time it is pressed.

The computer, however, views RETURN a little differently. Each time you press RETURN the computer inserts a single character into whatever you're doing. This character doesn't show on the screen. It is just a number—13.

Well, Hilda, our disk drive librarian, is fastidious about putting a 13 at the end of each PRINT# statement we use. You may think of this as a bookmark. Later, when viewing a file's contents, we'll see how useful these bookmarks can be.

Guess what? We're done with our file. But we need one more line to finish things up. It's mostly a courtesy to Hilda, but like all aspects of our relationship with this woman, it's crucial to obey all formalities.

30 CLOSE 2

That's it? That's it. The rule is this:

RULE 10: Tell Hilda to put the file away. CLOSE does that and 2 is the file number. Now, run this program. The disk drive will work a little (but now we know the truth—it's just Hilda) and then peace will descend upon the land. We've just written a file and saved it to disk. Hilda's happy, we're happy, everybody's happy.

Our whimsical little exercise may not seem all that earthshaking, but if you've stuck with me this far, you now have a

Continued on page 110

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by Jared Groth

Pokeless Sprites
for the Commodore 64



ART BAXTER

Pokeless Sprites is a short (396 bytes) machine language utility that will allow you to easily control sprites. Instead of looking up addresses to poke to or worrying about logical operators, all you will have to do is change a few variables. Whether you are just starting out or an experienced sprite programmer, you will find Pokeless Sprites a valuable utility.

Type the program in, then save it. Now run the program. If the data is correct, then you will see "pokeless on." Otherwise, check your data statements.

The following explanation of how to use pokeless sprites assumes you understand the basics of sprite programming such as how they get their shapes, what multicolor is, etc. If you don't, refer to the sprite section in your user's guide.

Class One Variables: Color and Position

The first variable in class one sets the pointer to the sprite's shape. The command is: P%(sprite number) = value. If you want to set the pointer for sprite zero to 192, all you have to do is type: P%(0)=192. The second variable allows you to change the sprite's color. The variable C% acts in the same way as P% does. Use C%(sprite number) = value to set it. The coordinates are set by using the variables X% and Y%. In the case of X%, values range from 0–511. The "seam" is automatically taken care of. The remaining two variables in class one, M1% and M2%, set the multicolor one and two.

Class Two Variables: On and Off, etc.

All class two variables have binary values. That is, their value is either 1 or 0. E% turns sprites on and off. H% controls horizontal expansion, V% controls vertical expansion, M% turns multicolor mode on and off, and B% sets priority over the background. For example, to turn on sprite five, just type E%(5)=1. E%(5)=0 turns it off.

How it Works

Pokeless Sprites works by modifying BASIC through a technique called "bank switching." Underneath the BASIC ROM is a hidden RAM. Pokeless Sprites copies the ROM to RAM, and then switches the RAM in. Then key BASIC routines are modified so that they jump to Pokeless Sprites.

This method of modifying BASIC has several advantages. First, it doesn't slow BASIC down as much as other methods do. Second, it allows for shorter code. Third, it allows you to treat the variables exactly like you normally would. The biggest disadvantage of this technique is that you can't use any programs that make use of the hidden RAM with Pokeless switched on.

A few final notes. Pokeless does not check to see if your variables are in range. However, you can prevent problems by dimensioning arrays. Also, if you plan on moving screen memory, you won't be able to use P% unless you make the following pokes: POKE 53207,LO : POKE 53208,HI. HI and LO are the high and low byte of the address for the first sprite pointer. To shut Pokeless off, use RUN/STOP RESTORE.

Finally, I have found Pokeless Sprites to be a valuable utility that makes sprite programming much less frustrating. I hope you do too.

The author wishes to thank James Ghofulpo for his help in preparing this article.

Quick Reference Table

Name	*Range*	*Explanation*
P%( )	0-255	Sets pointer value
C%( )	0-255	Sets color value
X%( )	0-511	Sets X coordinate
Y%( )	0-255	Sets Y coordinate
M1%( )	0-255	Sets multicolor (1) value
M2%( )	0-255	Sets multicolor (2) value
E%( )	0-1	Turns sprites on and off
H%( )	0-1	Sets horizontal expansion
V%( )	0-1	Sets vertical expansion
M%( )	0-1	Sets multicolor mode on/off
B%( )	0-1	Sets background priority

Use: Name (sprite number) = value

Before typing this program, read "How to Enter Programs" and "How to Use the Magazine Entry Program." The BASIC programs in this magazine are available on disk from Loadstar, P.O. Box 30008, Shreveport, LA 71130-0007, 1-800-831-2694.

Pokeless Sprites

```
10 PRINT"[CLEAR]"'BATX
20 FOR X=0 TO 395:READ A
   :POKE 52850+X,A:CK=CK+A:NEXT'JXTI
30 IF CK<>55607 THEN PRINT"ERROR IN
   DATA STATEMENTS":END'GIDL
40 SYS(52850)'BHRB
50 PRINT"POKELESS ON"'BAWE
60 NEW'BALC
10001 DATA 169,000,162,160,133,095,
      134'BCIW
10002 DATA 096,162,192,133,090,134,
      091'BCRX
10003 DATA 133,088,134,089,032,191,
      163'BCVY
10004 DATA 165,001,041,254,133,001,
      173'BCUA
10005 DATA 178,207,174,179,207,141,
      228'BCDB
10006 DATA 177,142,229,177,160,076,
      173'BCDC
10007 DATA 180,207,174,181,207,140,
      211'BCFD
10008 DATA 169,141,212,169,142,213,
      169'BCTE
10009 DATA 096,165,069,141,239,207,
      165'BCFF
10010 DATA 070,141,240,207,140,237,
      207'BCBW
10011 DATA 032,178,177,169,001,141,
      241'BCNX
10012 DATA 207,165,101,172,237,207,
      153'BCKY
10013 DATA 242,207,096,145,073,173,
      241'BCRA
10014 DATA 207,208,001,096,169,000,
      141'BCEB
10015 DATA 241,207,162,000,142,237,
      207'BCAC
10016 DATA 189,182,207,009,128,205,
      239'BCBD
10017 DATA 207,208,032,232,189,182,
      207'BCQE
10018 DATA 009,128,205,240,207,208,
      021'BCCF
10019 DATA 232,189,182,207,141,253,
      207'BCRA
10020 DATA 232,189,182,207,141,254,
      207'BCSX
10021 DATA 232,189,182,207,108,253,
      207'BCUY
10022 DATA 174,237,207,138,024,105,
      005'BCJA
10023 DATA 170,224,090,144,199,096,
      024'BCVB
10024 DATA 109,242,207,170,165,101,
      157'BCJC
10025 DATA 000,208,096,174,242,207,
      165'BCND
10026 DATA 101,157,248,007,096,141,
      237'BCQE
10027 DATA 207,173,242,207,010,024,
      109'BCBF
10028 DATA 237,207,168,165,101,153,
      000'BCGA
10029 DATA 208,173,237,207,240,001,
      096'BCLB
10030 DATA 174,242,207,169,001,224,
      000'BCBY
10031 DATA 240,005,024,010,202,208,
      252'BCNA
10032 DATA 141,237,207,165,100,208,
      020'BCYB
10033 DATA 169,255,056,237,237,207,
      141'BCAC
10034 DATA 237,207,173,016,208,045,
      237'BCRD
10035 DATA 207,141,016,208,168,096,
      173'BCUE
10036 DATA 016,208,013,237,207,141,
      016'BCCF
10037 DATA 208,096,170,165,101,157,
      000'BCHA
10038 DATA 208,096,141,237,207,174,
      242'BCTB
10039 DATA 207,169,001,224,000,240,
      005'BCRC
10040 DATA 024,010,202,208,252,141,
      238'BCVA
10041 DATA 207,165,101,240,013,174,
      237'BCEB
10042 DATA 207,189,000,208,013,238,
      207'BCKC
10043 DATA 157,000,208,096,169,255,
      056'BCYD
10044 DATA 237,238,207,141,238,207,
      174'BCVE
10045 DATA 237,207,189,000,208,045,
      238'BCSF
10046 DATA 207,157,000,208,096,171,
      206'BCLA
10047 DATA 201,206,080,000,029,207,
      000'BCLB
10048 DATA 088,000,038,207,000,089,
      000'BCAC
10049 DATA 038,207,001,067,000,018,
      207'BCYD
10050 DATA 039,069,000,119,207,021,
      072'BCGB
10051 DATA 000,119,207,029,086,000,
      119'BCDC
10052 DATA 207,023,077,000,119,207,
      028'BCFD
10053 DATA 066,000,119,207,027,077,
      049'BCPE
10054 DATA 112,207,037,077,050,112,
      207'BCCF
10055 DATA 038,029,254,200,128,000,
      000'BCSA
10056 DATA 000,000,000,000,000,000,
      000'BCWB
10057 DATA 000,000,000,119'BPGA
```

END

by Mike Rivers

Introducing Amiga CLI

Part 3
The Startup-Sequence



Last month we discussed the use of the Amiga's screen editor, ED. This month we will investigate the "startup-sequence," found in the "S" directory of the Workbench disk. The startup-sequence is an executable file which is invoked upon initialization or system reset. It is comprised of CLI commands that configure the Amiga and its operating system, and usually concludes by loading Workbench. You can use the CLI and ED to customize your startup-sequence to your needs.

Let's look at the original startup-sequence on the stock A500/A2000 Workbench disk. (As always, work with a backup copy of your Workbench disk.) First, boot the Amiga and open a CLI window. For those of you who missed the last two articles, refer to your system guide to see how this is done. To view and edit the startup-sequence, type: "ed s/startup-sequence" at the CLI prompt. ED will display the contents of this file. Now let's look at a line-by-line description.

The first thing we see is the "echo" command. This "writes a given argument to the current output stream." You see this enigmatic sort of language used in the AmigaDOS manual. It illustrates the fact that there are all sorts of things which come under the heading of "arguments" and many ways for output to be directed. In this case, a message is printed to the screen, "A500/A2000 Workbench disk. Release 1.2 version 33.59*N". The asterisk and the "N" generate a line feed and are not displayed when the message is printed.

The next command to be executed is "BindDrivers." BINDDRIVERS is used to "bind" add-on hardware like hard disk drives to device drivers found in the SYS:Expansion directory. The hardware has to have been "auto-configured" by the expansion library. That is, the expansion library has put each board in its own address space or has linked memory boards into the "memory free" pool.

Now we come to something that will look familiar to a programmer—the "If" command.

```
if Exists sys:system
   Path sys:system add
endif
```

EXISTS checks to see if the object of the argument, the directory "system," exists in the root directory of the system disk, designated by the logical device "SYS:". Satisfied that the directory "system" exists, a route through the directory is added to the operating system using the PATH command. The conditional statement is then terminated with the ENDIF command. After this path to the system drawer is established, the same thing is done for the utilities drawer in like fashion.

Next, "Dir RAM:" is executed, which will cause the RAM disk icon to appear on the Workbench screen. A path to the RAM disk is added with the PATH command.

"SetMap" is a 1.2 command which is used to change the keymap for the keyboard. Here, it is set to "usa1" for the A500 and A2000.

"Addbuffers df0: 20" adds 20-sector cache buffers to the specified disk drive. As the comment says, it uses up some memory, but improves disk access time.

Now we get to "LoadWb" which, as you may have guessed, loads Workbench.

The next command is particularly interesting, especially if you are used to seeing "go/no-go" error messages in BASIC. "Failat 30" means that if the program gives a non-zero "return code" greater than or equal to 30, then the command sequence has failed and will abort. The return code (30) indicates how serious the error was. The default value for FAILAT is 10. If the fail limit is increased, it means that you have designated certain classes of errors to be non-fatal and that the remaining commands in the sequence may proceed. Immediately after setting the return code limit at its highest level, 30, the command SETCLOCK is executed with its load option. The command sequence attempts to load the system clock with the time from the battery-backup clock. If the clock is not there or the battery is too low, the command SETCLOCK fails and returns an error level of 5. Upon seeing this, the CLI compares this to the level 30 and says "no big deal, keep going." The ">" then redirects any messages to a logical device called NIL:. Any message directed to NIL: is not printed to the screen and prevents the CLI window from getting cluttered with error messages. DATE displays the date and finally the command ENDCLI is given. The CLI window disappears, and any message generated by this goes to NIL:. At this point Workbench is on the screen and ready to use.

As you can see, a lot goes on during the execution of the startup-sequence; this is why there is a delay between the first startup message and the conclusion of the

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sequence. By incorporating your own command sequences and saving them using ED, you can customize your startup-sequence so your Amiga will be configured just the way you want it when you boot up. For example, suppose you want a CLI window to be open when the startup-sequence is finished. All you have to do is insert NEWCLI in the file after the "Endcli>NIL:" command. You could personalize your startup-sequence using the ECHO command by printing your own messages in the startup-sequence file. Bear in mind that the more you add to the startup-sequence, the longer it will take to execute.

It's useful to use the startup-sequence to copy your favorite CLI commands to RAM, so they will be there when you begin a CLI session. Depending on what model Amiga you have and how much memory is available, you will experience varying degrees of success here. An unexpanded A1000 isn't going to have a lot of space for RAM, but an A2000 with a couple of megs of RAM will allow you to fit the entire Workbench disk in memory. To copy "c" commands to RAM, insert "Makedir RAM:C" after "PATH RAM: add" in the startup-sequence. Then copy your most frequently-used commands using the COPY command. For example, COPY c: to RAM:c. You can then assign the "c" directory using the ASSIGN command like this: ASSIGN c: RAM:c. Then every time AmigaDOS goes looking for a CLI command, it will look at RAM and not your Workbench disk. This can save on disk swaps.

You may have a pair of applications you want to multitask and have them share the same character font. You could modify the startup-sequence on a custom Workbench disk to assign the logical device FONTS: to a particular disk. Here you would place "Assign SYS:fonts: to df1:fonts" in the startup-sequence. Then every time an application looks for a font it will look to df1:.

It's up to you to you decide what you need from your startup-sequence. If you'd like to find out what other Amiga owners are doing with their startup-sequences you can find customized startup files on public domain disks that do some fairly clever things. Or you can check with your local user group. I've heard that some startup-sequences play digitized sounds or speak greetings to their programmers using the SAY command. Collect 'em all! Trade 'em with your friends! ■

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Ski Jump

Ski Jump is an exciting event, by far the game's best designed and executed. This one is miles above similar competition found in *Winter Games.*

Players are given three tries to achieve the greatest distance. The event begins with a menacing view of the ramp tower, your skier a mere dot on this imposing structure. Starting down the ramp, the view switches to an awesome 3D perspective. Use the joystick to crouch down (for speed) and steer to the middle of the slope. Far below, the crow waits.

The *instant* you see the end of the ramp, press the fire button to jump. A split second too late and you'll crash head first into the snow. Hit it on the money and you'll be soaring with the birds. The sensation of flight is tremendous, aided by top-notch graphics and sound effects.

Player perspective now returns to third person, allowing you to view your skier from the side. Use the joystick to lean forward or back and raise or lower your arms. Maintain a tight 45-degree angle for the best distance and style points. Hit the joystick button in this stance to enter the landing position. Careful—any other position and you'll only crash.

When everything comes together perfectly, this is the game's most satisfying event.

> In less creative hands, so many variations on a single theme would spell software overkill.

Slalam

Enter this seemingly innocent event and be prepared for a wild ride. What looks simple turns out to be one of the toughest challenges of *The Games.*

A split screen allows one or two players to square off at a time. Two course lengths (350 and 400 km) and two difficulty levels are offered. The object is to weave in and out of a series of flags without hitting a pole or the sides of the course. Pressing the fire button increases your speed. The racer with the fastest time wins.

Another rhythm method event, players must utilize precise movements and strict concentration to survive. The frustration factor runs high here—one mistake and the game is over. For this reason, go easy on the fire button and don't hesitate for a second. Confidence is an essential trait for slalam skiers.

Speed Skating

This one- or two-player event features outstanding animation and rigorous player interaction. Break out the Epsom salts—you'll need it after competing here.

Players race one of four lengths on an oval track, from a one-half lap quickie to five arduous times around. Joystick control features a maddening version of the rhythm method that can easily lead to frustration. Players must move the stick left and right in perfect timing with the skater's legs. A window graphic helps with a close-up view of the skater.

Prepare for a lot of falling down until you master the right moves. Vertical skating on the corners offers the most trouble. Watch your skater's *left* leg to capture the correct rhythm. Five-lap races between two skilled human competitors make this the best head-to-head contest of the entire game.

Downhill Skiing

This is another ambitious design that almost—but not quite—works as intended. Once again, poor documentation hinders the already obscure design.

One player at a time competes in this fast-moving event. Competition begins by placing four cameras along the twisting mountain course. The event features an incredible first-person 3D perspective on the straightaways, switching to a side-angle view within range of the TV cameras. When in front of the cameras, skiers are urged to show off by performing aerial flips.

The purpose of downhill skiing is to pass through various "gates" and achieve the fastest time. The action here moves fast and furious—so much so that most of your time will be spent trying to slow down. The 3D graphics are spectacular, but the gates are easily missed. Corners are difficult to maneuver at slow speeds, however. And how many Olympic downhill racers do flips for the TV cameras? Something's amiss here.

If you can find the balance between speed and agility, Downhill Skiing has a lot to offer.

The Games: Winter Edition offers some of the sharpest graphics and animation of the entire Epyx series. Even experienced competitors will find the play action mentally and physically uncompromising. Some events may run hot and cold, but as a whole, this is a solid addition to a grand tradition. ■

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ShowANIM. (ShowANIM doesn't even allow you to alter anything while the animation is playing.)

Display's loop mode is superior to ShowANIM's in that the pause between loops is much smaller. Display will even show an IFF picture (in overscan) if you ask it to. Display not only has its own icon, but it also comes with a file requester for selecting which animation to run. This means that you can now run ANIM format animations from the Workbench! Those who refuse to touch the CLI can now finally view on their own PD animations from the likes of *VideoScape 3D* and *Animator: Apprentice*.

BlueMoon: by Tony Vallot
(AmigaZone file #13049;
Shareware: amount not specified)

A decent no-frills functional solitaire card game in which you must align all four suits from low to high.

King: by David Downing
(AmigaZone file #12762)

This is King's Korner, a solitaire game written in compiled AmigaBASIC. Although the graphics (for an AmigaBASIC game) are quite nice, the game requires virtually no strategy on the player's part. Chance is what usually dictates whether you will win or lose.

SayDate: by David Czaya
(AmigaZone file #13015)

A simple program that will tell you the date (but not the time) via the Amiga's speech capabilities.

Insane: by Ken Baer
(AmigaZone file #12742)

A fascinating variation on Leo Schwab's The Dream Goes Berserk. Fully titled "The Dream Goes Insane," this animation was the result of Ken using *Animation: Multiplane* to add a blur effect to Leo's original animation. If you could imagine watching Leo's animation on a *very* long-persistance monitor, that's what The Dream Goes Insane looks like. Of course The Dream Goes Insane requires one megabyte of memory to run.

Intelsat: by M. Vines
(AmigaZone file #12853)

A *VideoScape 3D* animation of a satellite orbiting a planet. Although this animation at first looks quite good for a normal *VideoScape 3D* animation, when you realize that the author used HAM, it doesn't seem to be very good at all. This animation requires one megabyte.

Marilyn: by Mitchell Hurst
(AmigaZone file #13331)

An interesting animation of Marilyn Monroe giving a kiss through a window, with color wallpaper serving as a border for the animation. Marilyn was created with *Animation: Multiplane* and *Animation Stand* from Hash Enterprises, and requires one megabyte of memory to run.

As I was finishing this month's column I received Fish disks 147 through 154, so I will be talking about the contents of those disks next month. As always, I can be reached on the AmigaZone on PeopleLink (ID: G KINSEY), or on the IDCMP BBS (617) 769-3172 (300/1200/2400 baud, running 24 hours a day), addressed to SYSOP. If you have written a public domain/shareware/freely distributable program, or have obtained one that you think is worth mentioning to all Amiga owners, then please attempt to contact me via the above, or through *Commodore Magazine*. See you next month.

To sign up to PeopleLink and their AmigaZone, call them at:
(800) 524-0100 (voice)

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fundamental understanding of how to work with the disk drive. Next we'll see how to retrieve the data in our little file.

Reading a File

Ready? Let's muster up our courage and go ask Hilda to give us back our file. Hilda may have her personality problems, but once you learn to speak her lingo she's a tireless worker.

Type NEW and press RETURN. The rules for retrieving files and reading their contents are not much different than for writing them. Start by getting Hilda's attention again.

10 OPEN 2,8,2,"TEST,R"

No new rules here. The only difference between this line 10 and the one for writing a file is the comma/R at the end which has already been explained. It tells our disk drive to read rather than write a file.

20 GET #2,A$

Type that in and then let's try running the program to see what happens.

What happened? Well, for one thing, the disk light is on—Hilda's ticked about something. Something must be wrong. Did you ruin your disk? Did you ruin your computer? Did you tap into the CIA's secret files?

No, no, no. You simply forgot to tell your disk drive that you were done with the file. In a minute I'll tell you how to do that. For now, let's see if we got any information at all.

Type PRINT A$ and press RETURN. You will see a "T" on the screen. Know where that came from? It's the first character in the file we saved. So we did get something after all. But what about the rest of the file? How do we get it . . . and keep it?

We need to add this line:

30 IF ST=0 THEN 20

Continuing with our Hilda metaphor (bear with me, please), here's how it works. We ask Hilda to give us our file, a byte at a time (line 20). After she fetches each byte, she calls over to the main office and gets a fellow who goes by the initials ST and whispers something to him. She won't tell us directly so we have to ask ST, What's wrong? ST usually answers cheerfully, "Nothing." If ST answers "64" then we know that Hilda didn't find any more bytes. We've reached the end of our file.

What happens then? Well, line 30, an IF/THEN statement, is false so we fall through to the end of the program.

What's going on here is that we are checking a variable, ST, the computer keeps track of. Each time after requesting data from the disk drive ST is updated. If it is a zero, everything's fine. If it's more than zero, something's amiss.

Now let's try running our program again to see what happens.

Done? Okay, type PRINT A$ again. This time you'll see nothing on the screen. Try this: PRINT ASC (A$). Aha, a 13 appears. Does that ring a bell? It's a RETURN. Remember, Hilda placed one at the end of the file. This proves we've gotten all the characters in our file.

Just to show you everything is working so far, add this temporary line:

25 PRINT A$;

Now run the program and you'll see our text, "THIS IS A TEST." appear a character at a time.

So everything's fine as far as getting the data is concerned. Except that we can only hang onto a byte at a time. We need a way to preserve each item. There are several ways to do this. One way is to add A$ to another string each time through the loop. Like this: 25 B$ = B$ + A$

Now run the program and then type PRINT B$. You'll see the text just as we saved it.

Another way is to preserve the data is to use an array. To do this you need to DIM the array first at the top of the program. Add these two lines:

```
 5 DIM A$(1000)
20 GET #2,A$(T):T=T+1
25
```

Note that we changed line 20 and deleted line 25. Now after running the program you can find out what each character of the file was by printing A$(X) where X equals whatever character you're looking for. For example, if you want to know what the third character was in the file, simply type PRINT A$(3) and you'll find out (it'll be an "I" in our TEST file). If you want to see all the characters, type: FOR I=1 TO T:PRINT A$(I);:NEXT.

This array method is superior to the previous one because it allows us to have more than 255 characters. Also, it is easier to deal with when we're looking for certain characters as is often the case when converting files. More on that in the next installment of this series.

There's an even easier way to get our text from the file. Type this:

20 INPUT#2,A$

Run the program and print A$ and you'll see you got all the text at one fell swoop. Thanks, Hilda. But why? Because INPUT# grabs the characters all the way to the next RETURN. Since we just opened the file, we grab all of it up to the RETURN Hilda inserted. Easy.

So if it's so easy, why not use INPUT# all the time? Because it has limitations.

The first limitation is that INPUT# will also stop reading data after it spots a comma, colon or period. If we had originally placed this in our file: "THIS IS A TEST. HI MOM." INPUT# would stop at the first period. HI MOM would be lost.

There's a way around this limitation. If you want to grab strings of characters which may include punctuation marks, you must save them with a quotation mark at the beginning. For instance, when we wrote this file we could've done it like this:

PRINT#2,CHR$(34)"THIS IS A TEST. HI MOM."

That CHR$(34) is nothing other than a quotation mark. The reason we had typed it out this way instead of simply pressing the quote key (SHIFT/2) is because we already are using quotes to set off the message we wish to send. That would've confused Hilda.

Another limitation of using INPUT# to get data from your disk is that it can only get as many bytes as your computer's input buffer will hold. On the 64 that's 88 characters; on the 128 the buffer's maximum size is 160 bytes. This limitation isn't usually a problem, but it can be.

Okay. All that's left to do is say goodbye and thank you to Hilda. Type this line:

40 CLOSE 2

That wasn't bad. If we run the program again, the only change is that Hilda no longer glares at us upon completion.

That's the end of part one of our lesson.

You have just learned how to save data to disk in a sequential file. There are other file types (like relative and user) but sequential files are the most common and the easiest to learn.

At this point you may be ready to start doing some programming making use of your new knowledge. Or you might want to muse over these things until next month when we look at how to put our knowledge of disk writing skills to good use: to transfer files from one form to another, to write programs that access the disk drive, and more.

Or maybe you'll get a late-night phone call between now and then. Go ahead, answer the phone. Even if everybody else has gone home, Hilda's out there somewhere. And now you know how to give her orders—politely. ■

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```
58 SYS 57812"S",8:POKE 43,1
   :POKE 44,192:POKE 768,174
   :POKE 769,167:SYS 47003,1'GSRV
60 POKE 782,192:SYS 65493:SYS 42291
   :LIST:POKE 44,8:POKE 768,139
   :POKE 769,227'HQVO
62 PRINT:PRINT"PRESS ANY KEY TO
   RETURN TO MENU"'CBDN
64 GET K$:IF K$="" THEN 64'EHHK
66 GOTO 6'BBPJ
68 PRINT"[CLEAR,DOWN2]LOADING ML
   ROUTINE..."'BAHQ
70 FOR X=4864 TO 5168:READ A:POKE X,A
   :T=T+A:NEXT'IUVM
72 IF T<>38560 THEN PRINT"ERROR IN
   DATA STATEMENTS":END'GHAQ
74 GOTO 6'BBPH
76 DATA 120,032,004,020,024,074,074,
   074'BGHP
78 DATA 074,172,000,020,234,234,234,
   145'BGOR
80 DATA 253,169,000,234,234,234,032,
   004'BGQK
82 DATA 020,172,000,020,234,234,234,
   041'BGAM
84 DATA 240,017,253,145,253,169,000,
   234'BGXO
86 DATA 234,234,200,140,000,020,192,
   255'BGFQ
88 DATA 208,019,160,000,140,000,020,
   230'BGSS
90 DATA 254,165,254,201,148,208,006,
   169'BGLL
92 DATA 022,133,254,088,096,162,001,
   202'BGVN
94 DATA 208,253,076,001,019,120,172,
   000'BGLP
96 DATA 020,234,234,234,177,253,234,
   234'BGBR
98 DATA 234,041,015,024,141,024,212,
   032'BGCT
100 DATA 033,020,172,000,020,234,234,
    234'BGBB
102 DATA 177,253,234,234,234,174,001,
    020'BGVD
104 DATA 024,074,074,074,074,141,024,
    212'BGVF
106 DATA 200,140,000,020,192,255,208,
    026'BGFH
108 DATA 206,001,020,160,000,140,000,
    020'BGEJ
110 DATA 224,000,240,022,230,254,165,
    254'BGLC
112 DATA 201,148,208,006,169,022,133,
    254'BGYE
114 DATA 088,096,160,036,136,208,253,
    076'BGTG
116 DATA 078,019,162,016,142,001,020,
    088'BGVI
118 DATA 165,197,201,017,240,004,120,
    076'BGUK
120 DATA 140,019,120,198,254,202,208,
    251'BGXD
122 DATA 162,016,169,000,172,000,020,
    234'BGHF
124 DATA 234,234,177,253,234,234,234,
    041'BGEH
126 DATA 015,024,141,024,212,032,033,
    020'BGVJ
128 DATA 172,000,020,234,234,234,177,
    253'BGSL
130 DATA 234,234,234,024,074,074,074,
    074'BGGE
132 DATA 141,024,212,200,140,000,020,
    192'BGRG
134 DATA 255,208,060,206,001,020,160,
    000'BGAI
136 DATA 140,000,020,230,254,174,001,
    020'BGRK
138 DATA 224,000,208,192,076,162,019,
    191'BGCM
140 DATA 000,002,160,008,160,008,169,
    000'BGCF
142 DATA 141,001,221,169,001,141,001,
    221'BGUH
144 DATA 136,192,000,208,241,173,013,
    221'BGNJ
146 DATA 173,012,221,160,002,140,001,
    221'BGSL
148 DATA 096,162,036,202,208,253,096,
    160'BGIN
150 DATA 036,136,208,253,076,188,019,
    000'BGIG
152 DATA 255'BDFD
```

END

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sion of true, smooth movement for slow, staggering jumps around the play field. Now I know this program, with its bulk and variety of challenges, packs plenty of play into this adventure, and the uneven animation is only an occasional occurrence. But any lack of fluidity can be an unwanted handicap in a contest that requires so many timed, precise maneuvers.

Seventeen different tests of strength, dexterity and perseverance have been devised, each presented as a distinct arcade game within the game.

Aside from this problem, the only other foreseeable complaint might stem from an unusual play element found in the original game. When working your way through the *Lair*'s challenges that are looking for a specific joystick tug or pull, your surrogate will only react when the correct controller input is made. To emphasize, *NO* character movement will be made if you don't make the required joystick response. Players who try to initiate an incorrect on-screen move will often misinterpret the absence of action as a program flaw, screaming that they tried to avoid the danger, but their Dirk didn't react. To the newcomer, it can be a frustrating situation. But as stated earlier, this designed controller quirk is found in the videodisc version of the game as well. Software Projects has merely carried this aspect over to the home adaptation. Like it or not, it's an accurate translation in an attempt to remain true to the original contest.

Like many arcade/adventures, *Dragon's Lair* is not for everybody. Its arcade foundation is apt to turn off those adventurers who like the more strategic cerebral test, and its tough unforgiving play will leave many of the younger or less tenacious joystick jockeys on the wayside. But for those of you who enjoyed the coin-op—especially those like myself who loved the challenge but had neither the time nor cash to follow through and save Daphne—this is an enjoyable, satisfying contest that makes a sincere, ambitious and ultimately successful attempt at reuniting us with an old friend. C

Continued from page 22

similar to the starring nasties in the aforementioned film, these walking nightmares can rise out of the floor and spring into an attack at any given moment. They are quick, agile and incredibly strong. It will take nearly a half dozen well-placed blasts to bring one down.

But don't despair, this is not a one-sided match. The crew that you will drop into this dastardly labyrinth are a competent lot of gung-ho soldiers. The skills and equipment that each surrogate has been outfitted with are widely varied, giving you a full complement of highly talented professional fighters armed with the most advanced weapons available. Since only one soldier can explore at a time, the delegation of duties becomes the strategic key. Each person excels in a defined area, and must be called upon at the right time to demonstrate his expertise. If you don't assess the situation and assign duties correctly, then this will undoubtedly be an abbreviated mission.

To aid you in your cause, at the base of the play field is an Information Panel, a narrow strip designed to provide a constant update of the players' vitals. Color coding helps you to quickly locate and read any specifics that might be needed. To the right of this Panel is a Motion Detector, a radar device which will flash to warn you whenever an Alien Leader is about to attack.

The rest of the play screen provides a three-quarter overhead perspective of the plant floor on which your crew member is currently searching. The graphics are colorful, crisp and exacting. Each creature has its own distinct look and move, with Alien Leaders actually grimacing before they wriggle to the floor to die. Every room is filled with an assortment of detailed furnishings. Tables, chairs, traps, food and ammunition are just some of the obstacles and goodies to be avoided or gathered during the rescue. A deep, rhythmic musical backdrop plays throughout the contest, providing a pulse-quickening instrumental that is ever present without being annoying. It's an effective, subtle audio touch.

With *Force 7*, DataSoft epitomizes the action-strategy genre by offering a high-speed shoot-'em-up that requires plenty of tactical planning. Many of the nuances and strategic possibilities will only be discovered with repeat plays. That adds up to staying power, the earmark of every quality program. Don't miss it.

Let the Force be with you. C

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I'm told. I realize that an eight-bit machine isn't ever going to behave like a 16-bitter. But there are a few things about GEOS and its family of products that I bet could be sped up with some programming changes.

For instance, when you delete a line on the screen in *geoWrite*, you must wait for the entire screen to rewrite itself. Why couldn't a block memory move be done to hoist everything up a notch? (I can hear the engineers already: "Okay, Mr. Know-it-all, come on down and start hoisting.") Or couldn't *geoPaint* let users jump a drawing-window at a time around the screen instead of the inexact and slow processes now available?

And here's a really big idea I've been kicking around: is there any way that GEOS could be put into a cartridge or a replaceable ROM chip? Or maybe somehow included with the RAM expander? I'm out of my league now because I don't know much about hardware, but I do know this: if there were a way to have GEOS always pop up when you turned on your computer, people would start using it a lot.

GEOS is an evolving product and Berkeley Softworks is a company that listens to the user community. GEOS 2.0 is proof of that.

Maybe these ideas would be difficult to implement. Maybe they'd be easy. GEOS is an evolving product and Berkeley Softworks is a company that listens to the user community. GEOS 2.0 is proof of that.

So, should you buy it? If you're a non-owner of GEOS (are there any out there?) and your main reason for having a Commodore computer is for games, the answer is no. Well, let me qualify that: no, unless you have some interest in creating some fancy letters, reports or other documents. Then the answer is, yes, buy GEOS 2.0. The "Pumping GEOS" documents that I include with these columns are examples of some of the fun you can have with GEOS.

As for the rest of you, if you've read this far in a GEOS column, you must be a GEOS user and if you're that, then you better become a GEOS 2.0 user. GEOS 2.0 passes the supreme pan pizza test. C

Continued from page 95

Amiga: *Hole in One Miniature Golf,* slated to ship in September, is absolutely fantastic. The program contains a number of traditional holes (like the windmill, for example) and complicated 3D challenges (like the underwater hole and the castle hole) that make you think in a different manner. Up to four people can play, you can print out your score cards, and the program contains two difficulty levels (normal and expert). *Hole in One Miniature Golf* features a simple user interface, extremely colorful graphics, realistic sounds, excellent animation, and four 18-hole courses to master. This is definitely one of the better Amiga games I've seen this year. Four additional course diskettes (with two to three courses per disk) will also hit the market in the near future.

DigiTek's *Powerstyx* program seems like a sophisticated version of the *Quix* arcade game. The object is to gradually reveal a picture that has been hidden behind a screen. This unusual strategy game challenges you to cut out pieces of that screen, as opposing characters try to stop you. If you carve out a particular area, that portion of the picture is revealed for all to see. Whenever 75% of the display has been unveiled, you progress to the next level of play. There is another way to advance in the game. Grab all the letters on the screen to spell out a word that has something to do with the picture.

Coming in 1989: Amiga and 64 consumers are in for a big surprise around the first of the year. Terrorists have taken over a North Sea oil platform, killing several of its workers and holding the rest hostage. You become a member of an elite commando team that's been brought together to tackle this problem. *North Sea Inferno* is the most incredible program I've seen in a long time. Its graphics are super realistic, and the digitized sounds are unbelievable. You also become addicted to sounds of machine gun fire, the familiar roar of choppers, realistic explosions, and the fury of a storm at sea. I'd like to go on record as saying *North Sea Inferno* is destined to become one of the hottest-selling products of 1989.

The Persian Gulf Conflict (for the Amiga) will appear on the market late in the first quarter. You are the captain of a Navy destroyer in this authentic simulation of the Persian Gulf conflict. George Johnson, president of DigiTek, tells me you will escort neutral tankers, destroy enemy mines and keep an eye on air traffic and surface vessels in his area. I've heard rumors you might have to deal with Silkworm Missiles and even a civilian airliner in the game. Whatever the case, the Persian Gulf is a popular subject these days, and this program has a lot of potential.

First Row Software

64/128: What can I say about *The Twilight Zone: Crossroads of Imagination*? The product is an interactive graphic adventure, with over 35 colorful graphic displays. The story begins as you wake up one morning and hear a peculiar noise outside. You go to the door and look outside. Everything appears to be normal, but as your character walks around town, things aren't as they seem. The rest is up to you.

Amiga: A second *Twilight Zone* graphic adventure, titled *By The Book,* will be appearing on the market late in the year. In this program, you assume the role of a mystery writer who never finishes a novel. In fact, you've worked on three or four books to date, but you can't seem to write the final chapters. All of a sudden, you're sucked into a literary universe where you must solve these mysteries before returning to the real world. *By The Book* also contains an even greater mystery to solve, but I'll let you find it on your own. After all, no one gets help in *The Twilight Zone.*

(See box on *Honeymooners* on page 94.)

Gamestar

64/128: How would you like to jump into the ring and take the smirk off the face of one of those hot-shot wrestlers? Gamestar grants this request in *Take Down,* their new Commodore 64 wrestling simulation. Players rubs elbows with eight rowdy wrestlers, as they participate in authentic tag team action. You determine the matches, select your own partner, and then jump into the "squared circle." Perform body slams, atomic drops, pile drivers, airplane spins and suplexes in the game, or leap off the rope for a big splash. *Take Down* also contains: single and double modes of play, hot graphics and interesting sounds. *Take Down* is software wrestling at its best. You can battle your way to the top of the Gamestar Wrestling Federation starting in September.

> If a knight takes an opposing pawn, you see the bold knight (armored and ready for action) sally forth to kill the enemy foot soldier. (Battle Chess)

(See box on *Pete Rose Pennant Fever* on page 92.)

Interplay Productions

64/128: A century from now, hacking can get you killed. *Neuromancer,* adapted from the William Gibson sci-fi novel of the same name challenges you to explore 35 different databases and 25 futuristic real world locations. Hack your way through the infinite regions of cyber space, but watch out for ICE. It can put an end your quest very quickly. The program also features a digitized original soundtrack by Devo. *Neuromancer* is scheduled to hit the market in October.

Amiga: It's one thing to convert a popular board game to the home computer environment, but *Battle Chess* is more than just an attractive chess program. The game features an excellent chess logic system, colorful character graphics, incredibly fluid 3D animation, and a variety of digitized sound effects. As you play *Battle Chess,* each move is graphically acted out on the screen. If a knight takes an opposing pawn, for example, you see the bold knight (armored and ready for action) sally forth to kill the enemy foot soldier. The program also contains ten levels of difficulty, remote play capability (where you can play the game with a modem), and a library of 30,000 opening moves. In the past, Interplay Productions has created *Bard's Tale I* and *II,* two of the hottest role-playing games to hit the market in recent years. I firmly believe *Battle Chess* is their next software classic.

Intracorp, Inc.

64/128 and Amiga: Have you ever wanted to visit Trump Castle in Atlantic City? Intracorp thought it would be great to make a Trump Castle home computer simulation, where everyone could play casino games and participate in all the fun and excitement. The program (with the working title "Trump Castle") contains slot machines, video poker, a craps table, blackjack, keno and a roulette wheel. Look for this new Commodore 64 or Amiga gambling program sometime late in the fall.

For nearly three-quarters of a century, people have talked about the mysteries of the Titanic (the luxury liner that reportedly struck an iceberg and sank in 1912). History chronicles the events of that terrible evening, but it took a man like Robert

D. Ballard (of the Woods Hole Oceanographic Institution) to locate the remains of the Titanic and try to set the story straight.

By the end of the year, Commodore 64 owners will be able to assume the role of Robert Ballard and search for the legendary vessel in a new program with the working title "Titanic." (An Amiga version is also in the works—no release date was available at press time.) As the game begins, you play a shipwreck archaeologist fresh out of college. You must gain a reputation by locating and exploring other sunken ships before you can get the necessary funding to start the search for the Titanic. Obtaining the right search vessel for a particular expedition can also be a problem. You can rent, buy or borrow a ship, but it pays to know what you're getting in the deal. Once you have your boat, it's time to buy equipment, select a crew, and purchase the necessary provisions. The long list of equipment includes weather radar, sonar, deep sonar, sonar/camera platforms, a magnetometer, navigational radios and even bathyscaphes and minisubs (that can be used with larger vessels). Every ship comes with an experienced captain and navigator on board, so you can concentrate on selecting the proper crewmen needed to perform a particular assignment. There are about 30 people in the game to choose from, including doctors, divers, a crane operator, a sea-level operations tech, etc. You also have to purchase provisions for the entire crew and enough fuel to successfully complete the mission.

Located almost two miles down, the remains of the Titanic are almost impossible to reach (let alone explore). Activate your minisub's on-board cameras to get a good look at things in general, and use the tethered robot camera platform to photograph objects at close range. Your long-term goal in this unusual simulation is to recover (fictional) diamonds from one of three safes scattered around the ocean floor. The Titanic program also contains digitized pictures of what the Ballard team saw, numerous objects waiting to be discovered, navigational problems to solve, and the opportunity to take control of minisubs and bathyscaphes.

Konami

64/128: Konami, a 20-year veteran of the arcade game revolution, is currently taking their best coin-op titles and porting them over to a number of different microcomputers (including the 64 and Amiga systems). Some original material will also be coming your way.

Ajax, a sophisticated helicopter game, was slated for release in November. The program features an intense aerial combat scenario, which challenges the user to battle tanks, ships, jet fighters, aircraft carriers and even other copters. Saving the world is a tough job, but somebody's got to do it.

> In *Jackal* several of your comrades have been captured and are being held as prisoners behind enemy lines.

Life Force, another November release, is the sequel to the popular *Gradius* arcade game. Before the action takes place, Zelos (a huge planet-eating alien) consumes the worlds of Gradius and Latis. The civilizations of these planets are doomed unless you can fight your way through six terror zones within the monster. Each zone contains a number of threats to your health, including deadly fire creatures, lava-spewing volcanoes and the dreaded Death Hand. When it comes to armaments, your star fighter is equipped with the latest ripple lasers, plutonic missiles and force fields. In the two-player mode, users work together to defeat this colossal menace. If you like a lot of action in your games, *Life Force* is the product to buy.

In November, you can sign up for operation *Jackal.* Several of your comrades have been captured and are being held as prisoners behind enemy lines. Someone has to rescue them, so you volunteer for the mission. The assignment is really very simple. An elite group of soldiers will release the captives and whisk them off to helipads in the army's new all-terrain attack jeeps. These special jeeps carry an arsenal of guided missiles and an incendiary grenade launcher as standard equipment which makes them superior to most military vehicles. Once the prisoners are safe, it's time to knock out the enemy headquarters. As arcade games go, *Jackal* is an incredible military operation, which will hold your attention for quite a while.

Speaking of the military, *Metal Gear* will be shipping late in the fourth quarter. Colonel Vermon CaTaffy (the radical leader of a foreign army) has activated Metal Gear, the ultimate weapon of destruction.

Pete Rose Pennant Fever

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> "I try to teach my players to think positive, practice positive and play positive."

ally patterned after major league stars, but because of licensing problems, we couldn't use their names. Pete Rose appears in the program. Pete helped us enhance the logic of his computerized counterpart, so it reacts to a situation the same way he would in real life. Even though *Pennant Fever* focuses on action and graphics, there are also elements of coaching, management and general management in the program.

Jermaine: Pete, what do you like about *Pennant Fever*?

Rose: First of all, I think the game will help youngsters to become more fundamentally sound baseball players in real life. There's a right way and a wrong way to play the game. It took me 25 years to learn the ins and outs of the sport. *Pennant Fever* will teach kids (at an early age) the way the "big boys" do things, so they'll grow up to become better baseball players overall.

The pitching part of the program also looks pretty good. Any time you can call a fast ball or a change-up or a screw ball or a curve ball, that's pretty realistic. That's the way we do it at Candlestick Park or Riverfront Stadium or Shea Stadium. The game also gives the player realistic views of what he should be seeing. I know the ball, for example, comes off the bat towards a center-fielder differently than it does for a left-fielder, and differently than it does for the right-fielder. It's little things like these that make the game realistic and just like playing big league baseball.

Jermaine: How do you feel about having your name on a computer game?

Rose: I think having my name on something that's fun is great. It's something my son and I can enjoy together and other kids can enjoy. I try to teach my players to think positive, practice positive and play positive. I think it's very important to get youngsters to learn to be competitive, to learn to play the right way, and to play the positive way. You don't have to be on the dean's list or be a computer whiz to play *Pennant Fever,* and you have just as much fun as if you're in the ball park. ■

It's your job to locate this threat to world peace and destroy it. The player, an expert in hand-to-hand combat, can also pick up a number of weapons and useful objects along the way. These include: a bomb blast suit, body armor, mines, a gas mask, plastic explosives, an antidote to poisons, a semi-automatic submachine gun, etc. A transceiver lets the user communicate with the "Big Boss," who can give him special instructions or the locations of certain objects. *Metal Gear* is an excellent program with good graphics and sounds.

Amiga: *Contra* (a spectacular 64 product) should be in the hands of Amiga users by late November. You must defeat Red Falcon, the most vicious warrior in the galaxy, or the Earth will cease to exist. This private little war takes place in the jungles of the Amazon Basin, where the player can pick up numerous weapons (from ultra-modern lasers to rapid-fire machine guns). Fight your way through complicated mazes, underground security systems and dangerous tropical rain forests. The disk also contains a two-player game, which challenges the users to work together to defeat this enemy of the human race. Certain elements of Contra may seem familiar, but I believe most consumers will really enjoy the thrill of the hunt (and being hunted) by this unearthly "Predator."

An Amiga version of *Jackal* is also scheduled to ship in November, while *Ajax* will hit the market sometime before the end of the year.

Coming in 1989: Atten-*shun*!!! At ease, men! During the month of January, *Boot Camp* will be open for business. This realistic military training facility dares you to master a number of gruelling challenges (including an obstacle course, several different firing ranges, arm wrestling competition and others). The player gradually advances to the rank of captain and earns the respect of his superiors. Keep an eye on this product; it promises to be one of the better ones of the year.

Castlevania is finally being ported over to the home computer environment. This original Nintendo title has a loyal following, and Konami believes it will have the same affect on micro game players. The user has to fight ghosts, goblins, wolves, demons and bats (who are all out for blood). If that isn't enough, Count Dracula can't wait to sink his fangs into your jugular. The game comes to an end when you destroy the evil count and put his legion to rest. Amiga owners can play *Castlevania* later this spring, while 64 consumers will see the program in early summer.

What do the names Leonardo, Michaelangelo, Donatello and Raphael mean to you? No, they're not members of a new British rock group. These are the famous *Teenage Mutant Ninja Turtles,* who have their own Saturday morning cartoon show and a popular monthly comic book. In the game, our heroes on a half shell have to defeat carnivorous robots in Chinatown and the savage "Foot" clan Ninjitsu Warriors (who are running amok in downtown New York). Your team has access to wacko bombs, nunchukas, an armed blimp, and a machine gunnin' party bus. The Ninjitsu Warriors carry nunchukas, swords and other deadly weapons. Be careful when you face these powerful foes, or you might end up as turtle soup. *Teenage Mutant Ninja Turtles,* for both the 64 and Amiga computers, will be coming your way later this spring.

MicroIllusions

Amiga: As you read this, *Music-X* should already be on the market. This unique product was designed for the serious musician, as well as the person who just wants to make music on the computer. I don't know much about music software, but *Music-X*'s long list of features looks pretty impressive. (See box on page 95.)

> Early in 1989, *The Flintstones, Johnny Quest,* and *The Jetsons* will be coming to an Amiga or Commodore 64 near you.

Early in the fourth quarter, an Amiga translation of *Sky Travel*—called *The Planetarium*—will be coming your way. This classic Commodore 64 astronomy program has been completely overhauled. It now contains more stars and all of the current NASA codes. The user interface is also easier to operate.

Watch for *Dungeon Construction Set* late in the year. You can use *DCS* to create your own dungeons, monsters, etc. You may also be able to take dungeons made

Silent Software

Continued from page 93

people to generate true animation in a hurry, without having to draw things out on paper a thousand times or more. *Onion* is also *DeluxePaint*-compatible and very easy to use.

Jermaine: Why do you call your new program "Onion"?

Von Wolfshield: I could have called it "Pencil Test," but I chose the name "Onion" because it reminds me of onion paper.

Jermaine: How powerful is *Onion?*

Von Wolfshield: I can illustrate that point by telling you a little story about Rusty Mills. Mills, a professional animator, has worked on some very impressive projects over the last few years: Don Bluth's *An American Tail,* Disney's *Sports Goofy Soccermania,* Filmation's *Pinocchio and the Emperor of the Night,* and the list goes on and on. Rusty had never used a home computer for animation, and the first system he saw artwork on was the Amiga (at Eric Daniels' house). Eric was working with *Onion* at the time, so he let Rusty play around with it for a while. Believe it or not, Rusty is currently using the program to produce a cartoon for television.

Onion allows you to save out animation under three different formats. First of all, we have IFF format. It records the graphic data, the number of bit planes, how many colors are involved, etc. This format permits you to save out individual pictures in a few seconds. ANIM (another interesting format) stores the first picture of a sequence on disk, examines the second one, saves out the differences, and continues the operation until the job is done. I really like this method of doing things because when minimal changes are occurring in the picture, you end up saving very little.

Finally we come to our special format. It allows us to compress and decompress code in real time on the computer. *Onion* also contains a unique playback routine, which allows you to watch the animated sequence at a certain frame rate on the screen. The program is preset to run things at one, two, 12, 15, 24, or even 30 frames per second guaranteed. But any frame rate can be set in *Onion* to make it easy for the guy who has to convert this type of material to video, where everything has to be properly timed. Running the program on an Amiga 512K machine, you can store from half a minute to a full minute of animation at a time. By the way, we're presently working with professional animators to add new features to the program that I'm sure you'll enjoy. C

> Representatives of the U.S. Air Force are currently examining *Falcon* as a possible low-cost flight trainer for their pilots.

with this product and interface them with software that is currently under development.

Coming in 1989: *The Shrine of the Demon Soul*, an Indiana Jones-type program scheduled for an early '89 release, challenges you to perform a number of interesting tasks. This is a fast-moving arcade-style game, in which you have to destroy terrible demons and rescue people.

Faery Tale II will be available for the Amiga sometime next year. It will be a lot larger than the original program (which contains over 19,000 screens).

There are also Hanna-Barbera projects in the works. Early in 1989, *The Flintstones* and *Johnny Quest* will be coming to a Commodore 64 near you. And *The Jetsons* will be available for the Amiga. Other Hanna-Barbera software projects are planned, so stay tuned for future announcements.

Sierra On-Line

Coming in 1989: Sierra On-Line has a number of superior Amiga projects slated for release in the first quarter. *King's Quest IV—The Perils of Rosella*, challenges you, as Rosella, to undertake a perilous journey to save the life of your ailing father, the king. Your mission becomes a number of quests, in which you must discover the mysteries of a strange land, deal with its hostile inhabitants, and return home to save your father. The program features fantastic 3D graphics, colorful detailed figures, excellent sounds and a fabulous soundtrack. By the way, the soundtrack was written by William Goldstein (who wrote the music for the *Fame* television series). *King's Quest IV* is almost like watching a full-length animated cartoon, so don't forget to move the joystick every now and then.

Manhunter: New York, written by the authors of *The Ancient Art of War,* takes software in a totally new direction. The program is a tale of horror and suspense set in a large city approximately two years after an alien invasion. The game is unique in that you start out being the bad guy. You're basically a spy for the other side, monitoring human activity in the city. If you detect a plot against the aliens, you identify the individuals, and report them to your alien masters. As you progress you discover the true identity of the aliens and what they're planning to accomplish. You then have to make the supreme decision: should you continue serving the aliens or help the underground overthrow them? *Manhunter: New York* contains excellent colorful graphics, advanced windowing effects, split-screen animation, close-ups and overhead views of certain scenes. The program is a daring new software approach, that (as of this writing) has no competition.

Other scheduled releases include: *Space Quest III, Leisure Suit Larry II, Police Quest II,* and *Gold Rush!* Roberta Williams is presently working on a classic murder mystery that takes place on a southern plantation. She also wants to do another program for children next year. That product will deal with American myths and legends (including Pecos Bill, Johnny Appleseed, Paul Bunyan and many others).

Spectrum HoloByte

64/128: *PT-109,* an amazing patrol boat simulation, is scheduled for September release. This authentic re-creation of WWII PT boat operations is top-notch. You have to deal with enemy submarines and aircraft, as you search for battleships and other mighty vessels. If you're a history buff, *PT-109* allows you to perform 45 missions typical of the period. These assignments can be day or night scenarios, and the more difficult ones simulate the early days of the war (when the lightly-armored craft didn't always carry what it took to get home). Your armaments include: torpedos, cannon, submachine guns, depth charges, etc. By the way, light rockets were actually used late in the war to protect the boats from air strikes. You will also find them in certain game scenarios. The program also contains: four areas of action (New Guinea, Phillipine Islands, Solomon Islands and the Mediterranean Sea), four 90-degree views, detailed damage reports, map displays, control panels and gauges, the ability to see things through binoculars, and the option to save a game in progress. You can even perform the same heroic mission in the Solomon Islands that made an unknown skipper named John F. Kennedy famous. *PT-109* contains incredible graphics, great sounds and historical authenticity.

> If you're a history buff, *PT-109* allows you to perform 45 missions typical of the period.

Amiga: If you think *Tetris* on the 64 is a great game, wait until you see the Amiga translation. *Tetris* (in case you haven't heard) is the first Russian microcomputer game to be sold in western markets. This unusual strategy program challenges you to put together pieces of a jigsaw puzzle, which can eventually fill in a work area. You take a variety of different shapes (as they drop from the top of the screen), rotate them, and try to put them together to form solid horizontal lines in the work area. When these lines are formed, you earn bonus points, and that line of material is removed from the picture. *Tetris* con-

The Honeymooners

Continued from page 94

throughout the Amiga version of the product. When Ed Norton appears on the bus, for example, you hear Art Carny's voice saying "Hey there, Ralphie Boy." There are approximately 20 other phrases in the program including "To the moon!" and "I've got a big mouth." There are 50 spaces between New York and Miami Beach, and once you've reached your goal, the game is over. I like to think of this project as a tribute to good old-fashioned family entertainment and the genius of the late Jackie Gleason.

Howard Berk: *The Honeymooners* characters were supposedly based on real people from Jackie Gleason's old neighborhood in Brooklyn. Many years ago, when the show was in production, some company offered Gleason money to put one of their refrigerators in Ralph's apartment. He said no because the Kramdens would never own a refrigerator. They would always have an ice box in their apartment. This story illustrates the fact that Gleason worked hard to keep everything true to character.

> "I like to think of this project as a tribute to good old-fashioned family entertainment and the genius of the late Jackie Gleason." (Honeymooners)

tains randomly-generated shapes, a special preview window (which allows you to look at the next piece that will fall), a super music soundtrack, and ten levels of difficulty. Everything has been revamped for this new version of the game, so expect to see some major changes. Keep an eye out for *Tetris* late in the third quarter.

Strategic Simulations, Inc.

64/128: *Typhoon of Steel,* the sequel to *Panzer Strike!,* is scheduled to ship early in the fourth quarter. There are three fronts in the game to choose from: Europe (Americans vs. Germans), Pacific (Americans vs. Japanese), and Asia (British vs. Japanese). The program also features special rules covering banzai charges, flame thrower attacks and naval support. When it comes to producing an authentic World War II battlefield simulation, SSI has done it again with *Typhoon of Steel.*

During the final days of October, software pilots can join the first bomber group (to strike deep in the heart of Nazi-occupied Europe) in *First Over Germany.* This B-17 flight simulator contains eight interesting training missions and approximately 25 difficult combat assignments. Real-time flight elements, like the gunner shooting at incoming enemy aircraft, can also be found in the game. I like this type of program because it re-creates a unique real-life experience that few people can tell us about today.

Amiga: *Falcon,* a sophisticated flight simulator, will be taking off in November. The program puts you in the cockpit of an F-16A fighter, where you learn to fly the craft like a pro. Approximately 20 man-years have gone into the development of the game (for the MS DOS systems), and F-16 pilots actually contributed to the product design. *Falcon* features an authentic F-16 cockpit design, a black box option (which records a particular flight for later evaluation), 12 typical F-16 missions and nine levels of difficulty. A number of medals can be earned along the way. *Falcon* is also especially user friendly. In the low est difficulty level, for example, the new pilot can learn to fly the plane without being shot down or crashing under normal circumstances. As you become familiar with the controls, you can progress to more complicated scenarios. The program documentation is extensive. It contains about 300 pictures and diagrams, and everything is written in simple language. One more note of interest: representatives of the U.S. Air Force are currently examining *Falcon* as a possible low-cost flight trainer for their pilots. If they think this product can be used to train their people, I'm sure it's realistic enough for the average consumer.

Coming in 1989: The Commodore 64 version of *Falcon* should be on the market early in the year.

SubLogic Corporation

64/128: Here's a real scoop! The long-awaited *Scenery Disk #9* will be available to the public late in the year. SubLogic pilots will finally be able to fly around the area of the midwest: St. Louis, MO; Chicago, IL; Springfield and Indianapolis, IN; and Cincinnati, OH. As in the earlier scenery disks, this one displays rivers, lakes, roads, airport layouts and many interesting landmarks. In fact, if you're flying over Champaign, IL you can see the homes of SubLogic programmers and development people beneath you (as well as the actual location of the company itself). Like the other installments in the series, *Scenery Disk #9* is also true to scale, easy to use, and a source of many hours of entertainment. C

Companies Mentioned in Coming Attractions

Activision
3885 Bohannon Drive
Menlo Park, CA 94025
(415) 329-0500

Capcom U.S.A., Inc.
1283-C Mountain View/Alviso Road
Sunnyvale, CA 94089
(408) 745-7081

Cinemaware Corporation
4165 Thousand Oaks Blvd.
Westlake Village, CA 91362
(805) 495-6515

Data East
470 Needles Drive
San Jose, CA 95112
(408) 286-7074

DigiTek
104 W. Seneca
Suite 4
Tampa, FL 33612
(813) 933-8023

First Row Software
3624 Market St.
Philadelphia, PA 19406
(215) 662-1400

Gamestar
see Activision

Interplay Productions
see Activision

Intracorp, Inc.
14160 SW 139th Court
Miami, FL 33186
(800) 468-7226

Konami
815 Mittle Drive
Wood Dale, IL 60191
(312) 595-1443

MicroIllusions
17408 Chatsworth Street
P.O. Box 3475
Granada Hills, CA 91344
(800) 522-2041
(818) 360-3715

Sierra On-Line
Sierra On-Line Building
P.O. Box 485
Coarsegold, CA 93614
(209) 683-6858

Silent Software
706 W. Broadway
Suite 202
Glendale, CA 91204
(818) 243-0313

Spectrum HoloByte
2061 Challenger Drive
Alameda, CA 94501
(415) 522-3584

Strategic Simulations, Inc.
1046 North Rengstorff Avenue
Mountain View, CA 94043
(415) 964-1353

SubLogic
501 Kenyon Drive
Champaign, IL 61820
(217) 359-8482

Music-X

Continued from page 95

are 255 tracks available in the program (even though most people will use 24 tracks or less).

You asked me to rate the program, so here are my findings: In terms of presentation, I give *Music-X* an A+. From what I've been able to extract, the program seems to be excellent. When all is said and done, *Music-X* allows you to do sophisticated homework that minimizes your time in a legitimate studio (that could cost you anywhere from $40 to $400 an hour) and yet maximizes your sound quality. I'm currently using *Pro MIDI,* but I would convert to *Music-X* if I had a more technical background.

Jermaine: Would you share a story about your work in Peter, Paul and Mary?

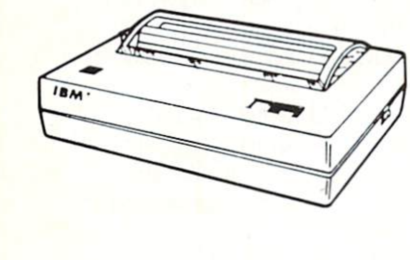
Stookey: The first Peter, Paul and Mary album (titled *1449*) was originally released in 1962. The material was recently re-mixed and re-released on compact disc this past July. It's interesting to note that the original recording was done on three tracks because that was state-of-the-art technology at the time. Today it didn't take very long to re-mix that material, when we only had to worry about three tracks. *[He laughs.]* C

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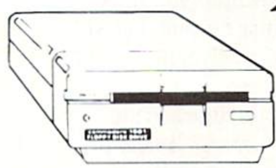
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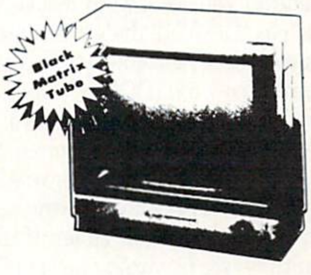
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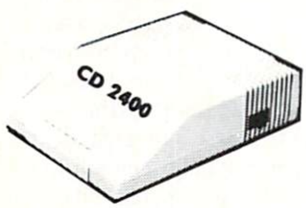
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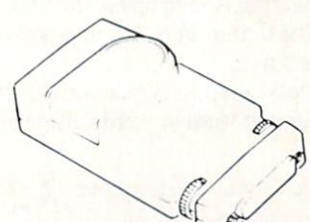
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The programs which appear in this magazine have been run, tested and checked for bugs and errors. After a program is tested, it is printed on a letter quality printer with some formatting changes. This listing is then photographed directly and printed in the magazine. Using this method ensures the most error-free program listings possible.

Whenever you see a word inside brackets, such as [DOWN], the word represents a keystroke or series of keystrokes on the keyboard. The word [DOWN] would be entered by pressing the cursor-down key. If multiple keystrokes are required, the number will directly follow the word. For example, [DOWN4] would mean to press the cursor-down key four times. If there are multiple words within one set of brackets, enter the keystrokes directly after one another. For example, [DOWN, RIGHT2] would mean to press the cursor-down key once and then the cursor-right key twice. Note: Do not enter the commas.

In addition to these graphic symbols, the keyboard graphics are all represented by a word and a letter. The word is either SHFT or CMD and represents the SHIFT key or the Commodore key. The letter is one of the letters on the keyboard. The combination [SHFT E] would be entered by holding down the SHIFT key and pressing the E. A number following the letter tells you how many times to type the letter. For example, [SHFT A4,CMD B3] would mean to hold the SHIFT key and press the A four times, then hold down the Commodore key and press the B three times.

The following chart tells you the keys to press for any word or words inside of brackets. Refer to this chart whenever you aren't sure what keys to press. The little graphic next to the keystrokes shows you what you will see on the screen.

SYNTAX ERROR

This is by far the most common error encountered while entering a program. Usually (sorry folks) this means that you have typed something incorrectly on the line the syntax error refers to. If you get the message "?Syntax Error Break In Line 270", type LIST 270 and press RETURN. This will list line 270 to the screen. Look for any non-obvious mistakes like a zero in place of an O or vice-versa. Check for semicolons and colons reversed and extra or missing parenthesis. All of these things will cause a syntax error.

There is only one time a syntax error will tell you the "wrong" line to look at. If the line the syntax error refers to has a function call (i.e., FN A(3)), the syntax error may be in the line that defines the function, rather than the line named in the error message. Look for a line near the beginning of the program (usually) that has DEF FN A(X) in it with an equation following it. Look for a typo in the equation part of this definition.

ILLEGAL QUANTITY ERROR

This is another common error message. This can also be caused by a typing error, but it is a little harder to find. Once again, list the line number that the error message refers to. There is probably a poke statement on this line. If there is, then the error is referring to what is trying to be poked. A number must be in the range of zero to 255 to be poke-able. For example, the statement POKE 1024,260 would produce an illegal quantity error because 260 is greater than 255.

Most often, the value being poked is a variable (A,X...). This error is telling you that this variable is out of range. If the variable is being read from data statements, then the problem is somewhere in the data statements. Check the data statements for missing commas or other typos.

If the variable is not coming from data statements, then the problem will be a little harder to find. Check each line that contains the variable for typing mistakes.

OUT OF DATA ERROR

This error message is always related to the data statements in a program. If this error occurs, it means that the program has run out of data items before it was supposed to. It is usually caused by a problem or typo in the data statements. Check first to see if you have left out a whole line of data. Next, check for missing commas between numbers. Reading data from a page of a magazine can be a strain on the brain, so use a ruler or a piece of paper or anything else to help you keep track of where you are as you enter the data.

OTHER PROBLEMS

It is important to remember that the 64 and the PET/CBM computers will only accept a line up to 80 characters long. The VIC 20 will accept a line up to 88 characters long. Sometimes you will find a line in a program that runs over this number of characters. This is not a mistake in the listing. Sometimes programmers get so carried away crunching programs that they use abbreviated commands to get more than 80 (or 88) characters on one line. You can enter these lines by abbreviating the commands when you enter the line. The abbreviations for BASIC commands are on pages 133-134 of the VIC 20 user guide and 130-131 of the Commodore 64 user's guide.

If you type a line that is longer than 80 (or 88) characters, the computer will act as if everything is ok, until you press RETURN. Then, a syntax error will be displayed (without a line number). Many people write that the computer gives them a syntax error when they type the line, or that the computer refuses to accept a line. Both of these problems are results of typing a line of more than 80 (or 88) characters.

"[HOME]" = UNSHIFTED CLR/ HOME
"[CLEAR]" = SHIFTED CLR/HOME
"[DOWN]" = CURSOR DOWN
"[UP]" = CURSOR UP
"[RIGHT]" = CURSOR RIGHT
"[LEFT]" = CURSOR LEFT
"[RVS]" = CONTROL 9
"[RVOFF]" = CONTROL 0
"[BLACK]" = CONTROL 1
"[WHITE]" = CONTROL 2
"[RED]" = CONTROL 3
"[CYAN]" = CONTROL 4
"[PURPLE]" = CONTROL 5
"[GREEN]" = CONTROL 6
"[BLUE]" = CONTROL 7
"[YELLOW]" = CONTROL 8
"[ORANGE]" = COMMODORE 1
"[BROWN]" = COMMODORE 2
"[L. RED]" = COMMODORE 3
"[GRAY1]" = COMMODORE 4
"[GRAY2]" = COMMODORE 5
"[L. GREEN]" = COMMODORE 6
"[L. BLUE]" = COMMODORE 7
"[GRAY3]" = COMMODORE 8
"[F1]" = F1
"[F2]" = F2
"[F3]" = F3
"[F4]" = F4
"[F5]" = F5
"[F6]" = F6
"[F7]" = F7
"[F8]" = F8
"[POUND]" = ENGLISH POUND
"[SHFT ^]" = PI SYMBOL
"[↑]" = UP ARROW

GRAPHIC SYMBOLS WILL BE REPRESENTED AS EITHER THE LETTERS SHFT (SHIFT) AND A KEY ("[SHFT Q,SHFT J,SHFT D,SHFT S]") OR THE LETTERS CMDR (COMMODORE) AND A KEY ("[CMDR Q,CMDR G,COMDR Y,CMDR H]"). IF A SYMBOL IS REPEATED, THE NUMBER OF REPITITIONS WILL BE DIRECTLY AFTER THE KEY AND BEFORE THE COMMA ("[SPACE3,SHFT S4,CMDR M2]").

THE PROGRAM WON'T RUN!!

This is the hardest of problems to resolve; no error message is displayed, but the program just doesn't run. This can be caused by many small mistakes typing a program in. First check that the program was written for the computer you are using. Check to see if you have left out any lines of the program. Check each line of the program for typos or missing parts. Finally, press the RUN/STOP key while the program is "running". Write down the line the program broke at and try to follow the program backwards from this point, looking for problems.

IF ALL ELSE FAILS

You've come to the end of your rope. You can't get the program to run and you can't find any errors in your typing. What do you do? As always, we suggest that you try a local user group for help. In a group of even just a dozen members, someone is bound to have typed in the same program. The user group may also have the program on a library disk and be willing to make a copy for you.

If you do get a working copy, be sure to compare it to your own version so that you can learn from your errors and increase you understanding of programming.

If you live in the country, don't have a local user group, or you simply can't get any help, write to us. If you do write to us, include the following information about the program you are having problems with:

The name of the program
The issue of the magazine it was in
The computer you are using
Any error messages and the line numbers
Anything displayed on the screen
A printout of your listing (if possible)

All of this information is helpful in answering your questions about why a program doesn't work. A letter that simply states "I get an error in line 250 whenever I run the program" doesn't give us much to go on. Send your questions to:

Commodore Magazine
1200 Wilson Drive
West Chester, PA 19380
ATTN: Program Problem

Have fun with the programs! ■

HOW TO USE THE MAGAZINE ENTRY PROGRAMS

The Magazine Entry Programs on the next pages are two BASIC machine language programs that will assist you in entering the programs in this magazine correctly. There are versions for both the Commodore 64 and the Commodore 128. Once the program is in place, it works its magic without you having to do anything else. The program will not let you enter a line if there is a typing mistake on it, and better yet, it identifies the kind of error for you.

Getting Started

Type in the Magazine Entry Program carefully and save it as you go along (just in case). Once the whole program is typed in, save it again on tape or disk. Now RUN the program. The word POKING will appear on the top of the screen with a number. The number will increment from 49152 up to 49900 (4864-5545 on the 128) and just lets you know that the program is running. If everything is ok, the program will finish running and say DONE. Then type NEW. If there is a problem with the data statements, the program will tell you where to find the problem. Otherwise the program will say "mistake in data statements." Check to see if commas are missing, or if you have used periods instead of commas. Also check the individual data items.

Once the program has run, it is in memory ready to go. To activate the program type SYS49152 (SYS4864 on the 128), and press RETURN. You are now ready to enter the programs from the magazine. To disable the Entry Program, just type KILL [RETURN] on the 64 or SYS4867 on the 128.

The checksums for each line are the same for both the 64 and 128, so you can enter your 64 programs on the 128 if you'd like.

Typing the Programs

All the BASIC program listings in this magazine that are for the 64 or 128 have an apostrophe followed by four letters at the end of the line (e.g., 'ACDF). If you plan to use the Magazine Entry Program to enter your programs, the apostrophe and letters **should** be entered along with the rest of the line. This is a checksum that the Magazine Entry Program uses.

Enter the line and the letters at the end and then press RETURN, just as you normally would.

If the line is entered correctly, a bell is sounded and the line is entered into the computer's memory (without the characters at the end).

If a mistake was made while entering the line, a noise is sounded and an error message is displayed. Read the error message, then press any key to erase the message and correct the line.

IMPORTANT

If the Magazine Entry Program sees a mistake on a line, it **does not** enter that line into memory. This makes it impossible to enter a line incorrectly.

Error Messages and What They Mean

There are five error messages that the Magazine Entry Program uses. Here they are, along with what they mean and how to fix them.

NO CHECKSUM: This means that you forgot to enter the apostrophe and the four letters at the end of the line. Move the cursor to the end of the line you just typed and enter the checksum.

QUOTE: This means that you forgot (or added) a quote mark somewhere in the line. Check the line in the magazine and correct the quote.

KEYWORD: This means that you have either forgotten a command or spelled one of the BASIC keywords (GOTO, PRINT..) incorrectly. Check the line in the magazine again and check your spelling.

OF CHARACTERS: This means that you have either entered extra characters or missed some characters. Check the line in the magazine again. This error message will also occur if you misspell a BASIC command, but create another keyword in doing so. For example, if you misspell PRINT as PRONT, the 64 sees the letter P and R, the BASIC keyword ON and then the letter T. Because it sees the keyword ON, it thinks you've got too many characters, instead of a simple misspelling. Check spelling of BASIC commands if you can't find anything else wrong.

UNIDENTIFIED: This means that you have either made a simple spelling error, you typed the wrong line number, or you typed the checksum incorrectly. Spelling errors could be the wrong number of spaces inside quotes, a variable spelled wrong, or a word misspelled. Check the line in the magazine again and correct the mistake. ■

The Magazine Entry Programs are available on disk, along with other programs in this magazine, for $9.95. To order, contact Loadstar at 1-800-831-2694.

```
10 PRINT"[CLEAR]POKING -";
20 P=49152 :REM $C000  (END AT
   49900/$C2EC)
30 READ A$:IF A$="END"THEN 110
40 L=ASC(MID$(A$,2,1))
50 H=ASC(MID$(A$,1,1))
60 L=L-48:IF L>9 THEN L=L-7
70 H=H-48:IF H>9 THEN H=H-7
80 PRINT"[HOME,RIGHT12]"P;
90 IF H>15 OR L>15 THEN PRINT
   :PRINT"DATA ERROR IN LINE";
   1000+INT((P-49152)/8):STOP
100 B=H*16+L:POKE P,B:T=T+B:P=P+1
   :GOTO 30
110 IF T<>86200 THEN PRINT
   :PRINT"MISTAKE IN DATA --> CHECK
   DATA STATEMENTS":END
120 PRINT"DONE":END
1000 DATA 4C,1F,C0,00,00,00,00,00
1001 DATA 00,00,00,00,00,0D,00,21
1002 DATA C1,27,C1,2F,C1,3F,C1,4C
1003 DATA C1,EA,EA,EA,4C,54,C0,A2
1004 DATA 05,BD,19,C0,95,73,CA,10
1005 DATA F8,60,60,A0,03,B9,00,02
1006 DATA D9,04,C1,D0,F5,88,10,F5
1007 DATA A0,05,B9,A2,E3,99,73,00
1008 DATA 88,10,F7,A9,00,8D,18,D4
1009 DATA 4C,EF,C0,E6,7A,D0,02,E6
1010 DATA 7B,4C,79,00,A5,9D,F0,F3
1011 DATA A5,7A,C9,FF,D0,ED,A5,7B
1012 DATA C9,01,D0,E7,20,2B,C0,AD
1013 DATA 00,02,20,74,C0,90,DC,A0
1014 DATA 00,4C,A9,C1,C9,30,30,06
1015 DATA C9,3A,10,02,38,60,18,60
1016 DATA C8,B1,7A,C9,20,D0,03,C8
1017 DATA D0,F7,B1,7A,60,18,C8,B1
1018 DATA 7A,F0,37,C9,22,F0,F5,6D
1019 DATA 03,C0,8D,03,C0,AD,04,C0
1020 DATA 69,00,8D,04,C0,4C,8E,C0
1021 DATA 18,6D,05,C0,8D,05,C0,90
1022 DATA 03,EE,06,C0,EE,09,C0,4C
1023 DATA CE,C1,18,6D,08,C0,8D,08
1024 DATA C0,90,03,EE,07,C0,EE,0A
1025 DATA C0,60,0A,A8,B9,0F,C0,85
1026 DATA FB,B9,10,C0,85,FC,A0,00
1027 DATA A9,12,20,D2,FF,B1,FB,F0
1028 DATA 06,20,D2,FF,C8,D0,F6,20
1029 DATA BC,C2,20,E4,FF,F0,FB,A0
1030 DATA 18,B9,08,C1,20,D2,FF,88
1031 DATA 10,F7,68,68,A9,00,8D,00
1032 DATA 02,4C,74,A4,4B,49,4C,4C
1033 DATA 91,91,0D,20,20,20,20,20
1034 DATA 20,20,20,20,20,20,20,20
1035 DATA 20,20,20,20,20,20,20,91
1036 DATA 0D,51,55,4F,54,45,00,4B
1037 DATA 45,59,57,4F,52,44,00,23
1038 DATA 20,4F,46,20,43,48,41,52
1039 DATA 41,43,54,45,52,53,00,55
1040 DATA 4E,49,44,45,4E,54,49,46
1041 DATA 49,45,44,00,4E,4F,20,43
1042 DATA 48,45,43,4B,53,55,4D,00
1043 DATA C8,B1,7A,D0,FB,84,FD,C0
1044 DATA 09,10,03,4C,84,C1,88,88
1045 DATA 88,88,88,B1,7A,C9,27,D0
1046 DATA 13,A9,00,91,7A,C8,A2,00
1047 DATA B1,7A,9D,3C,03,C8,E8,E0
1048 DATA 04,D0,F5,60,A9,04,4C,CA
1049 DATA C0,A0,00,B9,00,02,99,40
1050 DATA 03,F0,F0,C8,D0,F5,A0,00
1051 DATA B9,40,03,F0,E6,99,00,02
1052 DATA C8,D0,F5,20,96,C1,4C,12
1053 DATA C2,A0,09,A9,00,99,03,C0
1054 DATA 8D,3C,03,88,10,F7,A9,80
1055 DATA 85,02,A0,00,20,58,C1,20
1056 DATA 89,C1,20,ED,C1,E6,7A,E6
1057 DATA 7B,20,7C,A5,A0,00,20,80
1058 DATA C0,F0,D0,24,02,F0,06,4C
1059 DATA A8,C0,4C,CE,C1,C9,22,D0
1060 DATA 06,20,8D,C0,4C,CE,C1,20
1061 DATA BA,C0,4C,CE,C1,A0,00,B9
1062 DATA 00,02,20,74,C0,C8,90,0A
1063 DATA 18,6D,07,C0,8D,07,C0,4C
1064 DATA EF,C1,88,A2,00,B9,00,02
1065 DATA 9D,00,02,F0,04,E8,C8,D0
1066 DATA F4,60,18,AD,09,C0,69,41
1067 DATA 8D,09,C0,38,AD,0A,C0,E9
1068 DATA 19,90,06,8D,0A,C0,4C,1C
1069 DATA C2,AD,0A,C0,69,41,8D,0A
1070 DATA C0,AD,03,C0,6D,05,C0,48
1071 DATA AD,04,C0,6D,06,C0,8D,0C
1072 DATA C0,68,6D,08,C0,8D,0B,C0
1073 DATA AD,0C,C0,6D,07,C0,8D,0C
1074 DATA C0,38,E9,19,90,06,8D,0C
1075 DATA C0,4C,52,C2,AD,0C,C0,69
1076 DATA 41,8D,0C,C0,AD,0B,C0,E9
1077 DATA 19,90,06,8D,0B,C0,4C,67
1078 DATA C2,AD,0B,C0,69,41,8D,0B
1079 DATA C0,A0,01,AD,09,C0,CD,3C
1080 DATA 03,D0,20,C8,AD,0A,C0,CD
1081 DATA 3D,03,D0,17,C8,AD,0B,C0
1082 DATA CD,3E,03,D0,0E,AD,0C,C0
1083 DATA CD,3F,03,D0,06,20,CC,C2
1084 DATA 4C,4B,C0,98,48,68,4C,CA
1085 DATA C0,A9,20,8D,00,D4,8D,01
1086 DATA D4,A9,09,8D,05,D4,A9,0F
1087 DATA 8D,18,D4,60,20,A9,C2,A9
1088 DATA 81,20,DF,C2,A9,80,20,DF
1089 DATA C2,4C,D9,C2,20,A9,C2,A9
1090 DATA 11,20,DF,C2,A9,10,20,DF
1091 DATA C2,A9,00,8D,04,D4,60,8D
1092 DATA 04,D4,A2,70,A0,00,88,D0
1093 DATA FD,CA,D0,FA,60,END
```

END

```
5 TRAP 200
10 PRINT"[CLEAR]POKING -";
20 P=4864 :REM $1300  (END AT
   5545/$15A9)
30 READ A$:IF A$="END"THEN 110
80 PRINT"[HOME,RIGHT12]"P;
100 B=DEC(A$):POKE P,B:T=T+B:P=P+1
    :GOTO 30
110 IF T<>59382 THEN PRINT
    :PRINT"MISTAKE IN DATA --> CHECK
    DATA STATEMENTS":END
120 PRINT"DONE":END
200 PRINT:PRINT"DATA ERROR IN LINE";
    1000+INT((P-4864)/8):END
1000 DATA 4C,1E,13,4C,3A,13,00,00
1001 DATA 8E,00,F7,00,42,41,51,57
1002 DATA 0D,00,0D,43,08,14,0E,14
1003 DATA 16,14,26,14,33,14,A9,00
1004 DATA 8D,00,FF,AD,04,03,8D,12
1005 DATA 13,AD,05,03,8D,13,13,A2
1006 DATA 4A,A0,13,8E,04,03,8C,05
1007 DATA 03,60,AD,12,13,8D,04,03
1008 DATA AD,13,13,8D,05,03,60,6C
1009 DATA 12,13,A5,7F,D0,F9,AD,00
1010 DATA 02,20,5B,13,90,F1,A0,00
1011 DATA 4C,6F,14,C9,30,30,06,C9
1012 DATA 3A,10,02,38,60,18,60,C8
1013 DATA B1,3D,C9,20,D0,03,C8,D0
1014 DATA F7,B1,3D,60,18,C8,B1,3D
1015 DATA F0,35,C9,22,F0,F5,6D,06
1016 DATA 13,8D,06,13,AD,07,13,69
1017 DATA 00,8D,07,13,4C,75,13,18
1018 DATA 6D,08,13,8D,08,13,90,03
1019 DATA EE,09,13,EE,0C,13,60,18
1020 DATA 6D,0B,13,8D,0B,13,90,03
1021 DATA EE,0A,13,EE,0D,13,60,0A
1022 DATA A8,B9,14,13,85,FB,B9,15
1023 DATA 13,85,FC,A0,00,8C,00,FF
1024 DATA A9,12,20,D2,FF,B1,FB,F0
1025 DATA 06,20,D2,FF,C8,D0,F6,20
1026 DATA 79,15,20,A3,15,20,E4,FF
1027 DATA F0,FB,A0,1B,B9,EF,13,20
1028 DATA D2,FF,88,10,F7,68,68,A9
1029 DATA 00,8D,00,02,4C,B7,4D,91
1030 DATA 91,0D,20,20,20,20,20,20
1031 DATA 20,20,20,20,20,20,20,20
1032 DATA 20,20,20,20,20,20,91,0D
1033 DATA 51,55,4F,54,45,00,4B,45
1034 DATA 59,57,4F,52,44,00,23,20
1035 DATA 4F,46,20,43,48,41,52,41
1036 DATA 43,54,45,52,53,00,55,4E
1037 DATA 49,44,45,4E,54,49,46,49
1038 DATA 45,44,00,4E,4F,20,43,48
1039 DATA 45,43,4B,53,55,4D,00,C8
1040 DATA B1,3D,D0,FB,98,30,04,C9
1041 DATA 06,30,1E,88,88,88,88,88
1042 DATA B1,3D,C9,27,D0,13,A9,00
1043 DATA 91,3D,C8,A2,00,B1,3D,9D
1044 DATA 00,0B,C8,E8,E0,04,D0,F5
1045 DATA 60,4C,5C,15,4C,C5,14,A0
1046 DATA 09,A9,00,99,06,13,8D,00
1047 DATA 0B,88,10,F7,A9,80,85,FD
1048 DATA A0,00,20,3F,14,20,AE,14
1049 DATA 20,0D,43,84,FA,A0,FF,20
1050 DATA 67,13,F0,D8,24,FD,F0,06
1051 DATA 20,8F,13,4C,8F,14,C9,22
1052 DATA D0,06,20,74,13,4C,8F,14
1053 DATA 20,9F,13,4C,8F,14,A0,00
1054 DATA B9,00,02,20,5B,13,C8,90
1055 DATA 0A,18,6D,0A,13,8D,0A,13
1056 DATA 4C,B0,14,88,60,18,AD,0C
1057 DATA 13,69,41,8D,0C,13,38,AD
1058 DATA 0D,13,E9,19,90,06,8D,0D
1059 DATA 13,4C,CF,14,AD,0D,13,69
1060 DATA 41,8D,0D,13,AD,06,13,6D
1061 DATA 08,13,48,AD,07,13,6D,09
1062 DATA 13,8D,0F,13,68,6D,0B,13
1063 DATA 8D,0E,13,AD,0F,13,6D,0A
1064 DATA 13,8D,0F,13,38,E9,19,90
1065 DATA 06,8D,0F,13,4C,05,15,AD
1066 DATA 0F,13,69,41,8D,0F,13,AD
1067 DATA 0E,13,E9,19,90,06,8D,0E
1068 DATA 13,4C,1A,15,AD,0E,13,69
1069 DATA 41,8D,0E,13,A0,01,AD,0C
1070 DATA 13,CD,00,0B,D0,20,C8,AD
1071 DATA 0D,13,CD,01,0B,D0,17,C8
1072 DATA AD,0E,13,CD,02,0B,D0,0E
1073 DATA AD,0F,13,CD,03,0B,D0,06
1074 DATA 20,89,15,A4,FA,60,98,48
1075 DATA 68,4C,AF,13,A9,04,4C,AF
1076 DATA 13,A9,00,8D,00,FF,A9,20
1077 DATA 8D,00,D4,8D,01,D4,A9,09
1078 DATA 8D,05,D4,A9,0F,8D,18,D4
1079 DATA 60,20,61,15,A9,81,20,9C
1080 DATA 15,A9,80,20,9C,15,4C,96
1081 DATA 15,20,61,15,A9,11,20,9C
1082 DATA 15,A9,10,20,9C,15,A9,00
1083 DATA 8D,04,D4,60,8D,04,D4,A2
1084 DATA 70,A0,00,88,D0,FD,CA,D0
1085 DATA FA,60,END
```

END

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Maniac Mansion: To open the Garage Door you must go upstairs and use the Hunk-O-Matic Machine. Then go downstairs and open the Garage. You will see a car. If you want to open the trunk, you must get the Yellow Key in the Green Tentacle's Room. The Tools can be used to fix the Phone in the Library, but you must use a certain teenager to fix it.
Billy Freedman
Glendale, NY

Might and Magic: The Wizard Agar is behind a secret passage in the Inn, at the town of Erliquim. Telgoram is in the southeast corner of the Maze in Dusk. The code to turn off the Dancing Lights is Y1CU2ME3.
Robert Mikre
Upper Montclair, NJ

One-On-One: On any level, when you miss a shot and the computer gets the rebound, block him from getting past the free throw line to clear the ball. If you stay with him long enough, the 24-second clock will sound and you will get the ball.
Jeff Bloomberg
Northbrook, IL

PHM Pegasus: Your weapons have an effective range not mentioned in the manual. Use missiles under about 36 miles, cannon under ten miles, and chaff under two miles. Compress time to 128× and reduce to 4× when you get into heavy action. One more thing: over-controlling is suicidal!
Matt McLaine
Walterboro, SC

Pirates: When fighting against unbelievable odds don't panic. Choose the longsword instead of the rapier or cutlass. Keep using the "slashing-high" attack to cause the most damage. You may get down to only one man left, but you can still defeat the enemy captain. After you win, select Send A Prize Crew, so you'll have enough people to sail your ship.
Jason Bradley
Hamilton, OH

Plundered Hearts: On the pirate ship, tear a rag from the cotton frock. Then soak it in the water barrel. You can now throw it on the fuse to put out the fire.
Aaron Maupin
Fresno, OH

Raid Over Moscow: To get some extra points on screen four (missile silos), destroy all the silos except the main one. Now fly to the left side of the screen and shoot the enemy planes as soon as they appear. Continue destroying the planes until time has almost run out, then destroy the main silo.
Doug Smith
Milton, FL

Silent Service: If you're sick of being chased and depth charged by destroyers, choose Game Scenario and pick a Night Mission. The destroyers can't see you in the dark, so you are able to stay on the surface. The advantages of surface action are that you can use your deck gun, and you can go twice as fast if you were submerged.
Adrian Ali
Bradford, Ontario, Canada

Spy vs Spy I: Go straight to the door where you fly the plane and let the other guy change the stuff. When he tries to go out, kill him. Get the passport and go out the door.
Patrick Goguen
Plymouth, MA

Superstar Ice Hockey: If you really *have* to win the Cup try this: During your first year, recruit a player and give him no skills. Trade him to a good team like Edmonton, Philadelphia, Washington, Calgary or Minnesota. During the season have your record end 3–4. Recruit players with no skill and trade for good players. You don't have to include trading points.
Lance Gater
Address Unknown

Ultima IV: When fighting large numbers of pirate ships, hop ships when yours get low on ship points.

Run from fights only in dire emergencies; running counts against you and can hinder your attempt to become the avatar.

The seer will tell you when to go to the shrine and meditate. Ask him about each of the eight virtues of avatarhood, and he'll tell you how far along you are on each.

Don't cheat blind ladies or steal from the king. It counts against you and can prevent you from becoming the avatar.
Ronnie Hall
Lake City, FL

Up Periscope: When you are in a tight situation or a destroyer is about to ram you, just go into big chart navigation. There you can get away easily and safely.
George Rath
Congers, NY

Winter Games: In the Ski Jump, it is possible to get an overall performance of 225.9 by jumping off the ramp and tapping your joystick's lower-right position every half second. This doesn't always work because maybe your timing is off or the position of the joystick handle. But with a little luck, you'll get a good jump.
Bob Taylor
Saegertown, PA

Yie-Ar Kung Fu: To beat the first six opponents except for Pole, hold the joystick up while depressing the fire button. For Pole, you must pull down until he almost touches you, then push the fire button to kick him. When he crosses back to the other side of the screen and approaches you again, repeat this move until he is beaten. (Be careful—Pole is very dangerous).
Robert Earle Perkins
Address Unknown

Zork I: Get as many treasures as you can (preferably heavy ones) and confront the thief in his Lair. One by one give him your treasures. Seem strange?

Well for each item you give him, his load gets heavier and heavier, making it harder for him to defend! You will now have a few chances in which to kill the thief.
Alan Barrett
Boise, Idaho

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digit and by the product of the numbers it's touching horizontally and vertically once it lands. Any digit that isn't launched before it moves off the screen costs you 20 points.

The game ends when any digit lands next to or on top of an identical one.

When typing the program, you *must* leave a space between the RT and the OR in the middle of line 9. As shown, Reach! is for 64 mode. For 128 mode use, change the 10's to 12's in lines 1 and 13, and change the 198 to 208 in line 3.

Carlos J. Velazquez
Hobe Sound, FL

```
1 DIM M(41,18),A(4Ø):H=(256*PEEK(251)
  +PEEK(252))*(PEEK(1Ø)):FOR N=1 TO 4Ø
  :L$=L$+"[SHFT *]"
2 NEXT:PRINT"[CLEAR,DOWN]";L$;"
  [DOWN2Ø]"L$;SPC(1Ø)"HIT [RVS]SPACE
  [RVOFF] TO LAUNCH"
3 POKE 198,Ø:D=48+INT(RND(Ø)*9+1):P=1
  :N=1864:IF RND(Ø)<.5 THEN P=-1
  :N=19Ø3
4 N=N+P:POKE N,D:POKE N-P,32:GET A$
  :IF A$=" "THEN C=ABS(N-1864):N=N-4Ø
  :GOTO 7
5 IF P=1 AND N<19Ø3 OR P=-1 AND
  N>1864 THEN 4
6 S=S-2Ø:POKE N,32:Z=Ø:GOTO 1Ø
7 A(C)=A(C)+1:E=1Ø64+A(C)*4Ø+C
  :FOR L=N TO E STEP-4Ø:POKE L,D
  :POKE L+4Ø,32:NEXT
8 X=C+1:Y=A(C):Z=D-48:M(X,Y)=Z
  :UP=M(X,Y-1):DO=M(X,Y+1):LF=M(X-1,Y)
  :RT=M(X+1,Y)
9 IF Z=UP OR Z=DO OR Z=RT OR Z=LF
  THEN 12
1Ø S=S+Z*(DO+UP+LF+RT)+Z
  :IF S>H THEN H=S
11 PRINT"[HOME,SPACE4,LEFT4]";S,,"HI";
  H:GOTO 3
12 GET A$:PRINT TAB(1Ø)"[RVS]
  PLAY AGAIN (Y/N)[UP2]"
  :IF A$=""THEN 12
13 IF A$="Y"THEN HB=INT(H/256)
  :LB=H-HB*256:POKE 251,HB
  :POKE 252,LB:POKE 1Ø,1:RUN
14 PRINT"[CLEAR]GOODBYE[DOWN2]"
  :PRINT"RUN[UP3]"
```

64 Datamaker: Tired of entering DATA statements? Or would you like another way to compact data in your programs? Use one of the accompanying Datamaker programs. These programs not only create DATA statements for you, but they also create the subroutine to load them!

Just run either program and enter the starting and ending addresses of the data you want to convert, along with the line number of the first DATA statement that will appear in your program. Datamaker creates the data and enters the copy routines, and then asks you if you want to delete Datamaker. At this point, you can simultaneously press STOP and RESTORE to stop, or press RETURN to delete Datamaker's program lines. (Ignore the "UNDEFINED LINE NUMBER" error)

The difference between the two Datamaker programs is the form of data they create. In DATAMAKER.DEC, the data is stored as the usual decimal numbers—bulky, but easy to work with. DATAMAKER.ASC, on the other hand, converts each value into a two-letter code, which stores more compactly in the program. Otherwise, they both do identical jobs.

David Pankhurst
Montreal, Quebec
Canada

```
63ØØØ PRINT"DATAMAKER.DEC BY
63Ø1Ø INPUT"MEMORY START, END,
       AND 1ST LINE NUMBER";AS,AE,LS
      :X=63Ø3Ø
63Ø2Ø X$="RE[SHFT S]:F[SHFT O]
      I=ØTO-1ST[SHFT E]-1:R[SHFT E]X$
      :I=V[SHFT A](X$)=-1:N[SHFT E]
      :X="+STR$(AS)+":D[SHFT A]-1"
      :GOTO 63Ø7Ø
63Ø3Ø X$="R[SHFT E]Y:IFY<>999T[SHFT H]
      P[SHFT O]X,Y:X=X+1
      :G[SHFT O]"+STR$(LS):X=63Ø4Ø
      :GOTO 63Ø7Ø
63Ø4Ø X$="RE[SHFT T]":X=63Ø5Ø
      :GOTO 63Ø7Ø
63Ø5Ø FOR I=Ø TO 6:X$=X$+RIGHT$(STR$
      (1E7+PEEK(AS)),3)+",":AS=AS+1
      :I=I-(AS>AE)*9
63Ø6Ø NEXT:X$="D[SHFT A] "+LEFT$(X$,
      LEN(X$)-1):X=63Ø9Ø
63Ø7Ø PRINT"[CLEAR,DOWN2]"LS;X$
      :PRINT"AS="AS":AE="AE"
      :LS="LS+1Ø":G[SHFT O]"X"[HOME]";
      :POKE 631,13
63Ø8Ø POKE 632,13:POKE 198,2:END
63Ø9Ø IF AS<=AE THEN 63Ø5Ø
631ØØ X$="D[SHFT A] 999":X=6311Ø
      :GOTO 63Ø7Ø
6311Ø X=63ØØØ:INPUT"READY TO DELETE";
      X$
6312Ø PRINT"[CLEAR,DOWN2]"X
      :PRINT"X="X+1Ø":G[SHFT O]6312Ø
      [HOME]";:POKE 631,13:POKE 632,13
      :POKE 198,2:END
```

```
63ØØØ INPUT"MEMORY START, END,
       AND 1ST LINE NUMBER";AS,AE,LS
      :X=63Ø2Ø
63Ø1Ø X$="RE[SHFT S]:F[SHFT O]
      I=ØTO-1ST[SHFT E]-1:R[SHFT E]X$
      :I=V[SHFT A](X$)=-1:N[SHFT E]
      :X="+STR$(AS)+":D[SHFT A]-1"
      :GOTO 63Ø9Ø
63Ø2Ø Y$=CHR$(34):X$="R[SHFT E]X$
      :IFX$="+Y$+"/E"+Y$+"T[SHFT H]RE
      [SHFT T]":X=63Ø3Ø:GOTO 63Ø9Ø
63Ø3Ø X$="F[SHFT O]I=1TOLEN(X$)ST
      [SHFT E]2:P[SHFT O]X,A[SHFT S]
      (M[SHFT I](X$,I,1))*16+A[SHFT S]
      (M[SHFT I](X$,I+1,1))-11Ø5"
63Ø4Ø X=63Ø5Ø:GOTO 63Ø9Ø
63Ø5Ø X$="X=X+1:NEXT:G[SHFT O]
      "+STR$(LS-2Ø):X=63Ø6Ø:GOTO 63Ø9Ø
63Ø6Ø FOR I=Ø TO 13:X=PEEK(AS)
      :Y=INT(X/16)
63Ø7Ø X$=X$+CHR$(Y+65)+CHR$(X-Y*16+65)
```

```
       :AS=AS+1:I=I-(AS>AE)*99:NEXT
       :X$="D[SHFT A] "+XS
63080  X=63110
63090  PRINT"[CLEAR,DOWN2]"LS;XS
       :PRINT"AS="AS":AE="AE"
       :LS="LS+10":G[SHFT O]"X"[HOME]";
       :POKE 631,13
63100  POKE 632,13:POKE 198,2:END
63110  IF AS<=AE THEN 63060
63120  X$="D[SHFT A] /E":X=63130
       :GOTO 63090
63130  X=63000:INPUT"READY TO DELETE";
       XS
63140  PRINT"[CLEAR,DOWN2]"X
       :PRINT"X="X+10":G[SHFT O]63140
       [HOME]";:POKE 631,13:POKE 632,13
       :POKE 198,2:END
```

64 Sea Battle: You, the intrepid WWI flying ace, embark on a mission against an enemy ship. Your biplane gets ten flights, armed with one bomb each, to inflict sufficient damage to destroy the ship.

As you pass over the target, press any key to release your bomb. It will follow a normal trajectory affected by your altitude and speed, which are selected at random for each flight.

Each bomb hit scores points; the total is displayed on the screen. Direct hits amidships score the highest, and it takes ten or more points to destroy the enemy ship. If you fail to destroy her, you watch helplessly as she makes her successful escape.

The game gets more difficult as the ship approaches the left of the screen, since you have less and less time to react to the relative motion of the plane and its target.

Bob and David Snader
Baltimore, MD

```
10 POKE 646,15:PRINT"[CLEAR] SCORE
   : 0[SPACE5,RVS]=SEA BATTLE=[RVOFF]"
   :POKE 915,16:Q=1774
15 FOR P=0 TO 9:READ L,M:A(P)=L:B(P)=M
   :NEXT:FOR T=0 TO 26:READ L
   :POKE 832+T,L:NEXT
20 V=53248:S=54296:POKE V+39,0
   :POKE V+40,1:POKE 2040,13
   :POKE 2041,14:POKE V+33,14
25 FOR T=0 TO 9:C=RND(TI)*(100)+65:B=C
   :K=0
30 Q=Q-2:FOR P=0 TO 9:POKE Q+A(P),B(P)
   :NEXT:G=0:D=C/26:POKE V+21,3
   :POKE V+1,C
35 FOR X=0 TO 255 STEP D:POKE S,15
   :POKE S,0:POKE V,X:POKE V+2,X
   :GET K$:IF K$<>""THEN K=1
40 G=G+(.2*K):B=B+G:POKE V+3,B
   :POKE V+32,7:IF B>212 THEN POKE
   V+21,1:K=0:G=0
45 IF PEEK(V+31)<>0 THEN H=H+1
   :PRINT"[HOME] SCORE:";H:POKE V+32,2
   :POKE V+21,1:K=0:G=0
50 NEXT:IF H>9 THEN PRINT"[CLEAR]
    SHIP DESTROYED":FOR T=0 TO 60
   :POKE V+33,T:NEXT:END
55 NEXT:PRINT" TRY AGAIN!"
   :FOR T=0 TO 24:FOR P=0 TO 9
   :POKE Q+A(P),B(P):NEXT:Q=Q-2:NEXT
60 DATA 0,103,1,32,2,32,38,95,39,247,
   40,160,41,98,42,98,43,32,44,32,224,
   127,192
65 DATA 240,8,128,248,5,4,63,255,228,
   7,255,252,0,127,228,0,3,132,0,0,
   128,0,1,192
```

128 Restore Colors: If you have a 128 and are tired of its default color combinations, try this program. It sets the colors that appear when you press the STOP/RESTORE combination, and it also prints your own custom message at the top of the screen!

Just type the program and save it to disk, then run it. If everything works correctly, you will be prompted for the default border color, screen color and cursor color. You'll then be asked to type in the message that will appear at the top of the screen.

When entering the colors, use the numbers from 0–15 that you POKE into 53280 and 53281 to change your border and screen.

David C. May
Address Unknown

```
10 FOR L=5120 TO 5175:READ X:SM=SM+X
   :POKE L,X:NEXT
20 IF SM<>6008 THEN PRINT"ERROR IN
   DATA!"
40 INPUT"[CLEAR]BORDER COLOR";BC
   :INPUT"SCREEN COLOR";SC
   :INPUT"CURSOR COLOR";CC
70 POKE 5146,BC:POKE 5141,SC
   :POKE 5151,CC:POKE 2560,0
   :POKE 2561,20
80 B$="":PRINT"MESSAGE:":FOR I=0 TO 39
   :DO:GET KEY A$:LOOP WHILE(A$<" "OR
   A$>"[BACK ARROW]")AND A$<>CHR$(13)
   :B$=B$+A$:PRINT A$;:IF
   A$=CHR$(13)THEN LG=I:I=39:ELSE NEXT
90 PRINT:IF I=40 THEN B$=B$+CHR$(13)
   :LG=I
100 POKE 5164,LG+1:FOR I=0 TO LG
    :POKE 5175+I,ASC(MID$(B$,I+1,1))
    :NEXT:PRINT"ACTIVE!"
5120 DATA 032,204,255,032,122,065,032,
     141
5128 DATA 065,032,018,065,032,056,082,
     169
5136 DATA 000,133,021,088,169,000,141,
     033
5144 DATA 208,169,000,141,032,208,169,
     000
5152 DATA 133,241,162,000,189,055,020,
     032
5160 DATA 210,255,232,224,001,208,245,
     169
5168 DATA 013,032,210,255,076,055,077,
     000
```

128 Arabic to Roman Conversion: This makes those pesky Roman Numeral conversions that trouble so many of our lives. You can use it when designing the cornerstones for government buildings, when composing the ending credits for motion pictures, or when channeling with prominent citizens of ancient Rome.

Actually, it's a powerful little program that accepts Arabic nu-

merals into the millions, and converts them quickly and flawlessly. With a little additional programming, you could output to a printer, or even print all the Roman numerals from 1 to 3,999,999.

To express numbers larger than 3999, Caesar, Brutus and this program draw lines over the letters in the Roman numerals. The letter M stands for one thousand, but M with a line over it stands for a thousand thousand, or a million.

Jim O'Neill
Whiting, NJ

```
1 T=25:PRINT"[CLEAR,WHITE,RVS]
  ARABIC TO ROMAN CONVERSION
   -[RVOFF]":DIM A$(T),A(T)
  :R$="[UP,CMDR @,DOWN,LEFT]"
  :S$="[UP,CMDR @2,DOWN,LEFT2]"
  :FOR D=13 TO T:READ A$(D),A(D):NEXT
  :FOR D=1 TO 12:A(D)=A(D+12)*1000
  :NEXT
2 FOR D=1 TO 11 STEP 2:M$=M$+"[DOWN4]"
  :A$(D)=R$+A$(D+12):A$(D+1)=S$+A$
  (D+13):NEXT:C$="M"+R$
  :M$=LEFT$(M$,21):P$="[LEFT] "
  :A$(10)=C$+"X
3 N=3999999:PRINT"[HOME,DOWN2]
  INTEGER FROM 1 TO"N"OR 0 TO END?"
  :A$(12)=C$+"V":R$=CHR$(13)
4 DATA M,1000,CM,900,D,500,CD,400,C,
  100,XC,90,L,50,XL,40,X,10,IX,9,V,5,
  IV,4,I,1
5 K$="":J$="":WINDOW 0,3,38,3,1:DO
  :K$=K$+J$:L=LEN(K$):PRINT"[HOME]
  "K$"[CMDR @]";:GET KEY J$
  :IF L>0 AND J$=CHR$(20)THEN
  K$=LEFT$(K$,L-1):PRINT"[LEFT] [HOME]
  "K$"[CMDR @]";:ELSE IF L>0 AND
  J$=R$THEN EXIT
6 Q$="[HOME2,DOWN]":IF VAL(J$)=0 AND
  J$<>"0"THEN J$="
7 LOOP WHILE L<T:PRINT P$:K=VAL(K$)
  :IF K>N OR J$<>R$THEN 5
  :ELSE IF K=0 THEN PRINT Q$"[DOWN]"
  :END
8 K$=STR$(K):FOR D=LEN(K$)TO 8
  :K$=" "+K$:NEXT:WINDOW 0,5,39,24
  :PRINT M$;K$" = ";
9 Q=0:DO:Q=Q+1:LOOP UNTIL K-A(Q)>=0
  :K=K-A(Q):PRINT A$(Q);:IF K=0 THEN 5
  :ELSE 9
```

64 Timetrial: The green flag waves, and you're off! Three times around the track will prove what you're made of—three times around a viciously oil-slicked roadway!

Your car is a distinctly un-sporty purple square. You control it with a joystick in port 2. Be warned that once the car starts moving on the slippery track, it takes an equal amount of reverse joystick to stop it. If you run off the track, the car will come to a stop, then respond very slowly until it's once again in the race. If, I said, *if!* (Heh, heh, heh).

64 Timetrial comes complete with sound effects and a timing clock. In case you lose count during your frustration, a lap counter is displayed top left on the screen. When the counter reaches three, the race is over. Note your time, and press the fire button to race again.

A time of 40 seconds is very good. Get down to 35, and you're ready for Indianapolis!

Scott Glazer
Reno, NV

```
10 PRINT"[CLEAR]";:V=53248:S=54272
   :POKE V+32,9:POKE V+33,0
20 FOR T=832 TO 958:POKE T,
   -255*(ABS(T-881.5)<41):NEXT
   :POKE 2040,13:POKE 2041,14
30 X=52:Y=136:POKE V+27,2:POKE V+21,3
   :POKE V+29,2:POKE V+39,4
   :POKE V+40,5:POKE V+2,42
40 POKE V+3,128:POKE V+21,3
   :O=PEEK(V+31):PRINT"[CYAN]0[DOWN6]"
   :T$="[RVS,BROWN,SPACE16]"
50 T$=T$+"[SPACE6]":U$=LEFT$(T$,20)
   :PRINT TAB(12)U$:FOR T=1 TO 10
   :PRINT TAB(10)T$
60 NEXT:PRINT TAB(12)U$:POKE S+24,15
   :POKE S+6,240:POKE S+4,49
   :TI$="000000"
70 POKE V+1,Y:POKE V+16,X/256
   :POKE V,X-PEEK(V+16)*256
   :O=PEEK(V+30)=PEEK(V+31)
80 PRINT"[HOME,DOWN13,RVS]
   "TAB(18)INT(TI/6)/10:J=PEEK(56320)
   :F=9*(ABS(A)+ABS(D))
90 D=D+((J AND 1)=0)-((J AND 2)=0)
   :A=A+((J AND 4)=0)-((J AND 8)=0)
   :X=X+A:Y=Y+D:POKE S,F
100 IF PEEK(V+31)AND 1 OR X<24 OR
    Y<47 OR Y>229 OR X>320 THEN POKE
    V+39,1:A=0:D=0:POKE V+39,4
110 IF C*PEEK(V+30)THEN C=0:L=L+1
    :POKE S-V,48+L:IF L=3 THEN WAIT
    56320,16,16:RUN
120 C=C+(X>278)*(ABS(Y-160)<10)
    :GOTO 70
```

64 Timer: This uses what we call "interrupts" to display the time in hh:mm:ss format in the top-right corner of the screen. The 64's seldom-used Time Of Day (TOD) clock keeps track of the time, instead of the commoner but less accurate TI$ variable.

What all this means is that you can have a time display, updated 60 times each second, while working or running another program. The interrupts are used only to display the time, not to keep track of it.

STOP/RESTORE deactivates the display, but executing a SYS 49152 will re-enable it. Even with the display deactivated, the clock just keeps on ticking!

Stephane St-Louis
Ste-Therese, Quebec
Canada

```
2 FOR Q=49152 TO 49266:READ A:POKE Q,A
  :T=T+A:NEXT:IF T<>9872 THEN
  PRINT"DATA ERROR":END
3 DATA 120,169,19,141,20,3,169,192,
  141,21,3,88,96,41,15,24,105,48,96,
  173,11,220
4 DATA 32,13,192,141,32,4,173,10,220,
  32,13,192,141,35,4,173,9,220,32,13,
  192,141
5 DATA 38,4,173,11,220,32,110,192,41,
```

```
  1,32,15,192,141,31,4,173,10,220,32,
  110,192
6 DATA 41,7,32,15,192,141,34,4,173,9,
  220,32,110,192,41,7,32,15,192,141,
  37,4,169
7 DATA 32,141,30,4,141,39,4,169,58,
  141,33,4,141,36,4,173,8,220,76,49,
  234,74,74
8 DATA 74,74,96
10 INPUT"HOUR[SPACE2]";H$
   :IF LEN(H$)>1 THEN H=16
20 HH=VAL(RIGHT$(H$,1)):H=H+HH
   :POKE 56331,H:INPUT"MINUTE";M$
30 IF LEN(M$)>1 THEN M=16*VAL(LEFT$
   (M$,1))
40 MM=VAL(RIGHT$(M$,1)):M=M+MM
   :POKE 56330,M:POKE 56329,0
   :POKE 56328,0:SYS 49152
```

64 Break-Fast: This little game brings back the enjoyment of an arcade classic. To play, use a joystick in port 2.

Though the game isn't fast enough for arcade hot shots, it requires concentration and fast reflexes. Your goal is to break through the wall of bricks at the top of the screen. You only have one ball, so there's little room for error.

If you think you're too good for a little game like this, try to beat my own high score of 8600 points.

Ghislain de Blois
Timmins, Ontario
Canada

```
1 FOR X=1 TO 40:A$=A$+"[RVS,SHFT O]"
  :NEXT:POKE 532 0,6:POKE 53281,14
  :POKE 646,0:DX=1:DY=1:PX=38
2 PY=10:PRINT"[CLEAR]"TAB(15);
  "BREAK-FAST[DOWN2]":PP=18
  :PP$="[SHFT O,CMDR Y2,SHFT P]"
  :PRINT"[BLACK]";A$;"[BLUE]";A$;
3 PRINT"[L. GREEN]";A$;"[YELLOW]";A$;
  "[WHITE]";A$;"[BLACK]"
4 PRINT"[HOME,DOWN22]";TAB(PP);PP$
  :ZZ=PX+40*PY:POKE 1024+ZZ,81
5 PRINT"[HOME,DOWN22]";TAB(PP);"
  [SPACE4]":POKE 54296+ZZ,0
6 X=(PEEK(56320)AND 15)
  :IF X=11 THEN PP=PP-1
  :IF PP<0 THEN PP=0
7 IF X=7 THEN PP=PP+1:IF PP>36 THEN
  PP=36
10 PRINT"[HOME,DOWN22]";TAB(PP);PP$
   :POKE 1024+ZZ,32:PX=PX+DX
11 IF PX<=0 OR PX>=39 THEN DX=-DX
12 PY=PY+DY:IF PY<=0 THEN DY=-DY
13 ZZ=PEEK(1024+PX+40*PY)
   :IF PY>23 THEN 20
15 IF ZZ=207 THEN SC=SC+100
   :POKE 54296,15:POKE 54296,0:DY=-DY
   :GOTO 4
16 IF ZZ<>81 AND ZZ<>32 THEN DY=-DY
   :GOTO 4
17 IF SC<10000 THEN 4
20 PRINT"[CLEAR,DOWN,RIGHT]GAME OVER "
   :PRINT"[RIGHT]SCORE"SC
```

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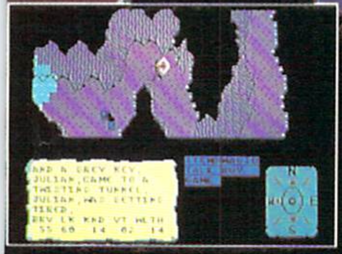


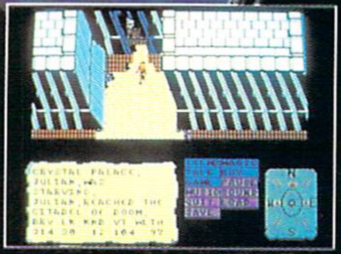
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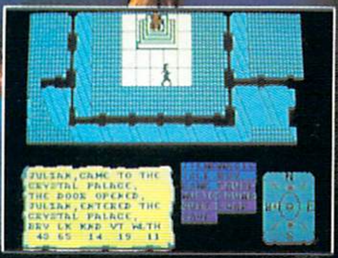
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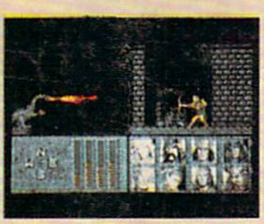
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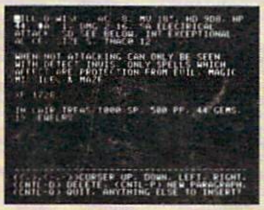
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